

YEARBOOK
of THE
HEATHER SOCIETY



2001

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THE HEATHER SOCIETY

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Gesellschaft der Heidefreunde
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FRONT COVER: *Daphne blagayana* mingling through a carpet of *Erica carnea* 'Foxhollow' (see page 1).

Yearbook of The Heather Society

2001



Editor
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DAVID SMALL

David Small joined The Heather Society in 1966 and was elected to Council (or committee as it was known then) at the Westham House Conference in 1972. Looking back, our paths have followed quite closely as I also joined in 1966, although my own modest efforts on behalf of the Society pale somewhat compared to the tasks that David has undertaken.

For some years now he has been on the Technical Committee working tirelessly on the *International Register*. After David McClintock stepped back, and following the most unfortunate demise of his successor Bert Jones, the task was left firmly in David's lap. I must confess that I often wondered if it would ever get published, but David pushed on always bearing in mind that the Society is the International Cultivar Registration Authority. During the final stages, utilising the database that he devised and managed, David was helped by Dr Charles Nelson, but he can look back with considerable pride and a great deal of satisfaction on finally accomplishing publication of the *Register* during his time as Chairman.

Another major achievement has been the *Handy guide to heathers*; originally published by Denbeigh Heathers in 1992, the second edition was published on behalf of The Heather Society in 1998. Its publication was a significant undertaking and an important contribution to heather cultivation and nomenclature. In fact the *Guide* was a precursor to the *Register* for the experience gained in producing it enabled the Society ultimately to publish the *International Register*. His knowledge has also enabled the Society to publish "in house" the two booklets that are now available, namely *Recommended heathers* and *Everyone can grow heathers*.

David has spent many hours travelling around the country helping fellow Council members come to terms with the computer age, setting up systems and sorting out the inevitable problems that afflict information technology. With the help of his son Ian, he set up the Society's web site and this has been responsible for the recruitment of many new members not only in the UK but also overseas. The final accolade must surely be that our web site has achieved five star rating in *The good web guide*.

On more than one occasion he has presided over propagation sessions, both at his home and, in one instance at a Conference, supplying cutting material and ready-prepared trays for members to insert their preferred cuttings, before he whisked these away to his nursery. Some months later, when rooted, they were returned to their rightful owners. Who else would undertake a field trip to Spain with a mobile propagator in the boot of the car and return home with some already rooted?

For all of his gardening life he has had to cope with alkaline soil and apart from the use of various chemical methods, frowned upon by some members, he has pursued and recommended species that previously were not considered suitable to the benefit of us not blessed with acid soil.

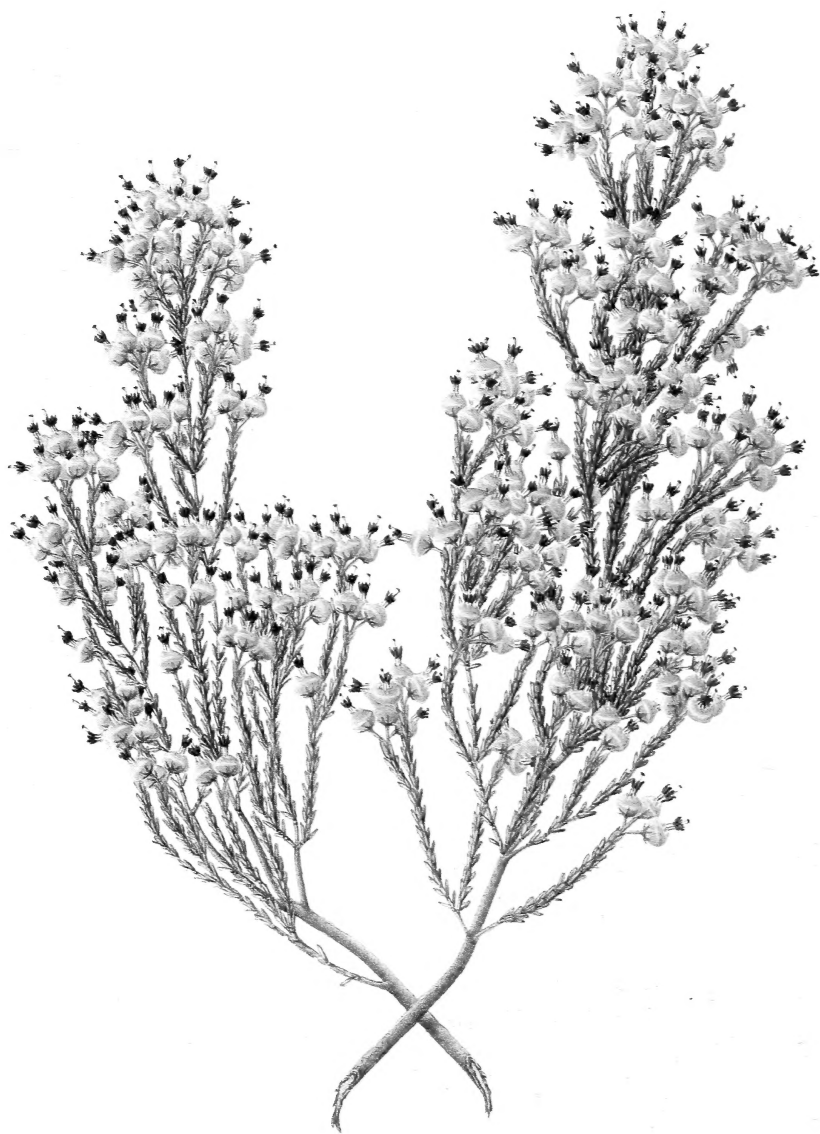
No mention of the work that he has undertaken for the Society would be complete without mentioning the "backroom staff" at Denbeigh – there is only one! It seems a lot more, but Anne Small seems able to cope with an ever-increasing workload and the amount of assistance she has given to David is incalculable. We wish them well.

Arnold Stow



DAVID SMALL

President of The Heather Society, 2000
Chairman of The Heather Society 1992-2000



A painting by Jonathan Tyler of *Erica umbellata* 'David Small'. The original was presented to Allen Hall, upon his retirement as Treasurer, on 30 September 2000 at the 30th Annual Conference (see *Bulletin of The Heather Society* 6 (1): 2 (2000)).

Vår vintergröna trädgård: Our evergreen garden

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"The garden is a lifelong concern." These are the words which open my book *Vår vintergröna trädgård* (*Our evergreen garden*). They reflect my husband's and my own opinion on gardening as a sort of symbiotic life between plants and human beings.

The book is meant to show what a garden, that is built up with the deliberate purpose of being enjoyable for 365 days a year, can look like. This is as much a question of giving up plants which do not fulfil the demands as finding those which match them.

We demand that a plant shall be beautiful all the year but not necessarily that it must be "evergreen". There are plants whose branching system, buds or long-lasting fruits make them deserve a place in our garden. We do grow some deciduous trees, for example rowans, for their moderate size and beautiful fruits. The plants described in the book however are all evergreen. This entire assortment may create a rich and varying garden which offers a view of beauty each day of the year .

We like long-lived plants. With time they become dear friends. We enjoy seeing them grow as we age together. Short-lived trends are not for us.

About 30 years ago we found ourselves owners of 1.5 hectares of conventional garden. We have spent most of our spare time changing it after our own taste and interests. The former owner had put on some top soil but in many places it was merely gravel, mixed with stones of all sizes. To start with we could not put a spade into the ground without coming across a stone. With time we have achieved some skill in lifting even very big stones by the simple lever technique. Consequently there are lots of stones in our garden. We like it (and we have to).

Even if we now have a fairly decent soil, it still has very sharp drainage. We can't grow everything, so it is lucky that we happen to like just those plants which can be happily grown under existing conditions. We have to make additional efforts for big-leaved rhododendrons but most of the evergreen assortment does well without extra fuss.

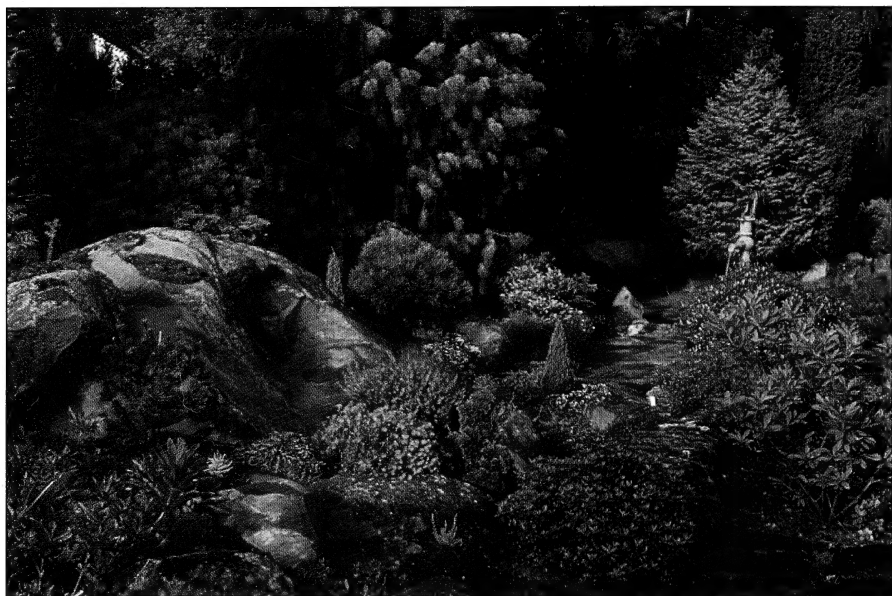


Fig. 1. A quiet evening after rain in September. Conifers, dwarf rhododendrons and azaleas, and a few heather plants as clouds of soft pink (*Erica x stuartii* 'Irish Lemon', and an unnamed *Calluna* seedling).

In an evergreen garden the seasonal changes are less dramatic than in a conventional garden. Such a garden is also characterised by more definite shapes. We enjoy flowers but we don't put them first. I agree with a Japanese artist who, on a television programme, said: "We need flowers but not much." The fewer the means of expression, the more quiet the atmosphere.

There are plenty of low-growing evergreen plants so to get height and structure we must use conifers (at least in our country). They offer forms like pillars and cones which are rare within other groups of plants. In our garden the bigger conifers provide the framework, but there are also many compact forms and dwarfs, the total number exceeding 500. We enjoy grafting and this means we have access to many rare plants by swapping scions with other conifer-lovers abroad. Grafting from some of the 200 or so witches-brooms we ourselves have found in the wild has also enriched our garden with some extremely small plants.

The longest chapter in my book concerns conifers. To make the choice easier for those who are not familiar with them, they are grouped by shape, not by species which is the usual arrangement.

Heather is an essential component in a garden like ours. Over the years we have grown about 650 cultivars, most of them *Calluna*. Our aim was to find the hardiest and best plants for our climate. Thus it was a great pleasure to relate my experiences of growing heathers in 20 pages of the book, the most exhaustive survey ever in our language.

For most Swedish people "heather" means *Calluna*, one of our most common wild plants. This plant leaves no one cold. As a link to the past it awakens deep feelings, some of which mean that it is difficult to make heathers popular with Swedish gardeners. I quote:

Even when the cultivated plants are lush, sometimes even exuberant, we can never look at them without being touched by the remembrance of the rigours of life in the countryside in olden times, where heather was a part of everyday life – used as fuel, for brooms, cattle feed, mattress stuffing, for dyeing wool, as packing material, for medicine and even mixed in bread. Those who don't want to remember, dislike heather. It is poor man's flower. Those who are attracted by the simple, the harsh and the humble, love it. There is nothing in between.

Heathers have many evergreen relatives. We grow a few big-leaved rhododendrons but the small-leaved dwarfs are more in harmony with heathers and conifers (and our taste). Their gnarled stems give an impression of age and wisdom. They are also much easier to grow on gritty soil.

Rhododendrons are not architecturally useful in the same way as conifers. In terms of their shapes they are "shrubs". It does not matter so much which one we plant in a place where a rhododendron feels right. However, when planting many together we have to match the flower colours. As the flowering season is short, there is all the more reason to pay close attention to the foliage. Many have a beautiful indumentum and (or) tomentum. The colours of buds and new shoots are features which may add interest.

To the family Ericaceae belong a series of interesting genera including *Cassiope*, *Phyllodoce*, *Andromeda*, *Vaccinium*, *Gaultheria*, *Ledum*, *Leiophyllum* and *Arctica*. We grow them all, including cultivars and hybrids. Many are best grown on peat; some need part shade. Our favourite is *Cassiope*. Few plants possess in such ample measure refined simplicity and natural beauty.

One chapter of my book is devoted to *Rhododendron* and other ericaceous genera. Another chapter treats non-ericaceous, evergreen shrubs. Many of these are easily grown, like *Buxus*, *Berberis*, *Cotoneaster*, *Euonymus*, *Ilex*, *Genista*, *Mahonia*, *Paxistima* and *Polygala*. Their beauty often is in reverse proportion to their growing power. Our dislike of spines and rampant growth has banished most of them from our garden. Our favourite in this group is *Daphne* and



Fig. 2. *Cassiope* 'Muirhead' in a cushion of *Coprosma petriei*; 'Muirhead' was planted first but has with time been surrounded by *Coprosma*.

Daphne blagayana in particular. Its wonderful scent fills all our garden on chilly April evenings. Another lovely species is *Coprosma petriei*, a thick, springy carpet of minute, sparkling green leaves. Visitors like tapping it.

A choice plant is *Linnaea borealis*, the sweetest beauty of our blueberry forests. Tiny, scented and romantic, but a woody shrub nevertheless and remarkably vigorous. We planted it with *Chiogenes hispidula* which is also a creeper. In other words, conflict was unavoidable, and, to our surprise, *Linnaea* came out victorious in the struggle. It simply out-grew and choked the competitor.

Except for *Yucca filamentosa* we grow no tall perennials. Evergreens in this group are almost exclusively "alpines". Some require quite different growing conditions than most of the plants already mentioned. The majority of plants in an evergreen garden usually prefer acid soil (low pH). Plants which require lime (high pH) belong to another environment and can look wrong mixed with conifers and heathers.

We try to find plants which reasonably match the character of the base material in our garden. There are useful species and cultivars of *Acaena*, *Armeria*, *Dianthus*, *Lewisia*, *Gentiana*, *Iberis*, *Saxifraga*, *Thymus* and *Sempervivum*, to mention but a few.



Fig. 3. *Daphne blagayana* is a plant we cannot be without, especially because of its scent. Here the creeping branches mingle in a carpet of *Erica carnea* 'Foxhollow'. (You may wonder at the foliage colour, but it is a north-facing slope.)

Hepatica nobilis in the wild grows on lime but it is very tolerant. This is a species as beloved and longed for in our gardens as in the wild. The first downy buds tell us that Spring is here. Another species with a place in our hearts is the lovely *Pulsatilla vernalis*. Few plants reflect so well the intangible melancholy of the Scandinavian Spring.

My book also includes a little about grasses and sedges. These are distinctive plants, whose thin lines, arching or upright, add firmness and elegance to any garden. I am very fond of them but sadly only a few are evergreen. The intense blue *Festuca glauca* is nice with heathers. Another good contrast plant is the copper-coloured *Carex buechananii* although visitors have sometimes asked why I do not take away the "dead" plant. It seeds profusely, but the seedlings vary greatly in colour. *Carex* is a huge genus, notoriously addicted to "loose affairs", and the plants that we grow are not always what we think they are.

The future development of our garden is more about "take away" than "add". We want it cleaner, more restrained – a step closer to Japanese simplicity. Heather, however, will forever remain a part of it. Let me try to translate the closing words of *Vår vintergröna trädgård*.



Fig. 4. Another view of Brita and Carl-Erik's beautiful garden

For those who love their garden the creative process never ends. Nothing ever gets definitely finished. Plants change all the time, views change, rooms close but open again when trees grow on and trunks get bare. A garden has times of perfection but also times of imbalance when we have to change and start again.

Those who find pleasure in gardening are always looking ahead. Next spring our new rhododendron will have flowers. Next summer the lawn will get a new outline. We have to replace some old heathers and the hedge should be cut down properly. It never ends.

The impression of a garden arises from the beauty and harmony, the scents and sounds of time being. It deepens with the memory of all the joy and expectation, all the hours of hard work, all the anxiety about wind and weather. Add the deep satisfaction of having achieved something with our own hands and our own ideas.

Go out in the twilight of a quiet August evening when the warmth lingers and the crickets play. Don't be in hurry. A small glass in your hand enhances the pleasure. The rapid, hectic time when buds swell and burst, shoots grow, and flowers compete for the attention of insects, that time is gone. The summer is mature, resting in its fulfilment. In the twilight the architecture of the garden stands out and becomes clear. When colours fade and lose their importance, one realises that form is of primary importance. "In this place a narrow pillar would be perfect. Next summer ...".

Erica tetralix L. (cross-leaved heath) in The Burren (Co. Clare, Ireland)

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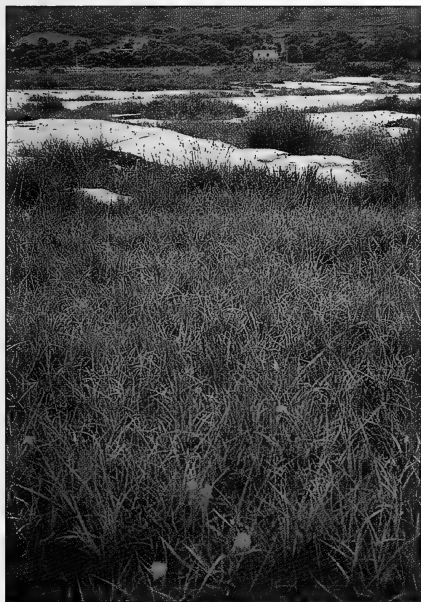


Figure 1. The view across the Carran turlough with *Erica tetralix* in the foreground; photograph 15 July 2000 (JB)

Erica tetralix (cross-leaved heath), a distinctly calcifuge species, was found on 17 July 1997 growing in The Burren (Co. Clare, v.c. H9) on limestone pavement on the northern side of the Carran polje (within District 2 as defined by Webb & Scannell, 1983). The station is an area of about five hectares of limestone heath above the upper (Winter) limit of the turlough water. Individuals of the species were growing in a peat-filled solution-pan surrounded by large, gently sloping, ice-polished Carboniferous limestone clints (Figure 1). The area containing *E. tetralix* was quite restricted, with the most prominent associate being *Narthecium ossifragum* (bog asphodel) (Figure 2).

The plants of *E. tetralix* had relatively large, bright mauve flowers. The flower colour approached H2 on

The Heather Society's colour chart and Red-Purple 70b on the RHS colour chart. The flowers were arranged horizontally around the stem (approaching *E. tetralix* f. *stellata*), and, to one of the recorders (DW), were superficially reminiscent of those of *E. x stuartii* 'Irish Lemon'.

Following the publication of Webb & Scannell (1983), and Nelson & Walsh (1991), it became apparent that the flora of the Carran polje, despite it being a well-known botanical site, had not been fully reported. The vegetation of the larger solution-pans includes other calcifuge species such as



Figure 2. View of the pan with *Erica tetralix* and *Narthecium ossifragum* present; photograph 15 July 2000 (JB)

Narthecium ossifragum and *Drosera rotundifolia* (round-leaved sundew) which were first recorded as growing in District 2 of The Burren (see Webb & Scannell, 1983) only in 1987 and 1990 respectively (see Nelson & Walsh 1991).

One of the authors (JB) has visited this site annually since the early 1980s. In 1998 the records collected by the authors were sent to David Nash at the Dublin Naturalists Field Club and subsequently to the BSBI recorder for Clare, Catriona Brady. Our record of the presence of *Erica tetralix* on the limestone of The Burren came to the notice of Charles Nelson whilst he was collating the records that form the basis of a checklist of the vascular plants of the Burren region (Nelson, 2000), and it was his interest in this most unexpected habitat for cross-leaved heath that has led to the writing of this note.

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The ultimate prize — a new species of *Erica* !

E. G. H. OLIVER & I. M. OLIVER

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There are many plant lovers who would dearly like to discover a new species of plant. This privilege does not come to all those who comb wild areas in search of this elusive prize. In some cases it is luck that plays an important part of the story.

So it was in the winter of 1999 that our son, Thomas, went climbing and mountain-biking on the Matroosberg in the inland Western Cape mountains, to experience a recent heavy fall of snow. He was requested to bring back any *Erica* species he saw—just in case there was something interesting! When he returned he brought us one flowering specimen and several others that still had old fruits from the previous summer. Much to our surprise and delight we found that his flowering specimen was a new species not recorded before. He had seen only a few plants due to the deep snow. A few days later we visited the area with him by which time much of the snow had melted (Figure 1), but in the open, stony, warmer, north-facing areas we found many plants of his species in full flower (Figure 2). We thus name the species after him — *filialis* = of our son (unfortunately there already exists the species, *E. thomae* L. Bolus, named after Thomas Stokoe).

Erica filialis is most similar to *E. setociliata* H. A. Baker, but differs in having

1) leaves with long gland-tipped hairs on the margins only, not also on the abaxial surface;

2) sessile to subsessile larger glands on the margins of the sepals, not long thinly stalked small glands all over the surface; sepals half the length of the corolla tube and ovate, not about as long as and obscuring the corolla tube and oblong-lanceolate;

3) corolla glabrous, purple and very sticky, not finely hairy (occasionally glabrous), white to pinkish and non-sticky;

4) anthers dark brownish red and hard in texture, not pale yellow, thin and delicate.

Both species grow at high altitudes on the inland mountains where they are subjected to snow, but the new species flowers in August and *E. setociliata* flowers from September to November.



Fig. 1. Thomas Oliver with his discovery on Matroosberg.

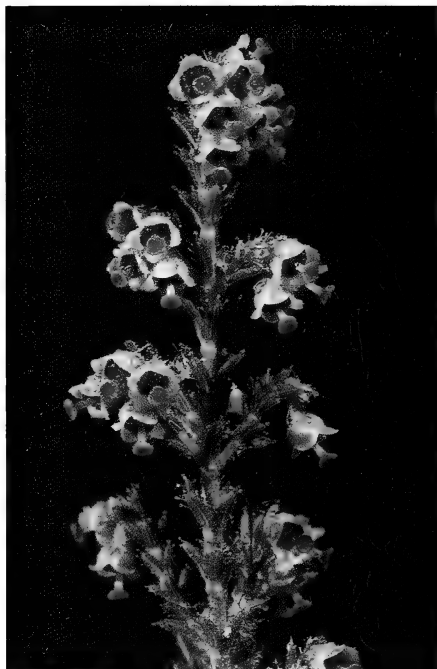


Fig. 2. *Erica filialis*. Close-up of flowering branch of the type collection.

Other species that may be related are *E. trichadenia* Bolus, *E. cederbergensis* Compton and *E. coarcervata* H. A. Bak. which have a similar facies and share a number of characters but these are insect-pollinated with nectaries around the base of the ovary.

This locality is a well-collected one and the discovery of a new species just above the ski lifts prompted us to investigate all collections from the Matroosberg which at 7,000ft is the highest mountain in the region. From our database it became clear that many collectors have visited this mountain including Marloth and Bolus in the late 1800s, but all were there from October to January with none in the depths of winter.

From our single visit to the area we recorded *E. filialis* in several populations on the ridge running north from the main peak of Matroosberg and at the head of Spekrivierskloof (Figure 4). The main (type) population occurred on west-facing gradual slopes due east of Ski Club Hut. These slopes are stony/rocky with very short, restiad dominated vegetation. The plants were small and

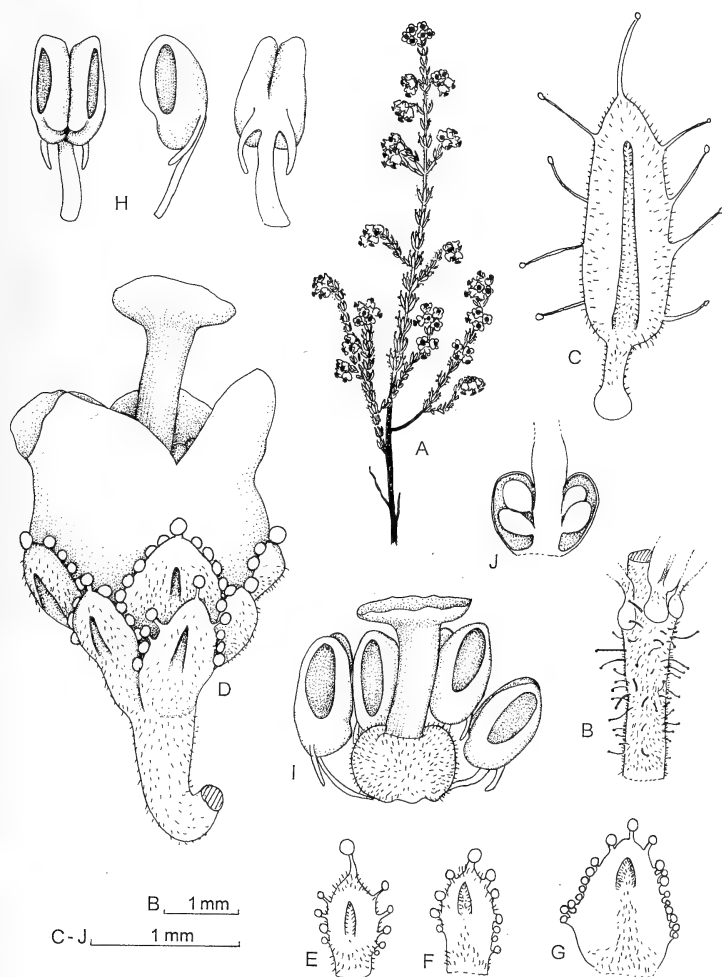


Fig. 3. *Erica filialis*. A, flowering branch; B, stem; C, leaf, abaxial view; D, flower; E, bract; F, bracteole; G, sepal; H, stamen, front, side and back views; I, gynoecium and androecium; J, ovary cut open longitudinally. All drawn from the type, *Oliver 11300*.

compact to slightly spreading and barely appearing above the restiads. The only other heath in the area was *E. junonia* Bolus which still bore some old flowers from the previous season (November 1998–January 1999). It was interesting to note that the material of *E. filialis* possessed capsules from the previous flowering period, some with seeds still inside, stuck on the plants.

A few additional small populations were located further north along the ridge in rocky outcrops. One small group of plants was found growing in the lee of very large outcrops. The shrubs were much more diffuse and bore more open-backed leaves.

The species clearly grows in an area which is subjected to a considerable amount of snow when flowering takes place. This would seem very surprising for pollination, but when we visited the area in perfect sunny weather the newly opened flowers, on being disturbed by us, easily shed clouds of pollen.

This factor coupled with the enlarged stigma and lack of any nectaries around the base of the ovary clearly points to pollination by wind. This would obviate the need for insects to be flying around under the chilly conditions.

Erica filialis E. G. H. Oliv., sp. nov.

Ericae setociliatae H. A. Baker affinis sed ab ea foliis pilis longis glandulosis solum in marginibus (non margine et pagina abaxiali), glandibus majoribus sessilibus ad subsessilibus in marginibus sepalorum, sepalis ovatis corolla dimidio brevioribus (non aequantibus), corolla glabra viscosissima purpurea (non puberula sicca rosea), antheris atroxerampelinis (non stramineis) differt. Figurae 2, 3 & 5.

TYPE: SOUTH AFRICA, Western Cape, 3319BC, Hex River Mtns, Matroosberg at head of Spekrivierskloof, 1940 m, 19 August 1999, E.G.H. & I.M. Oliver 11300 (NBG, holotype; BM, BOL, E, K, MO, NY, P, PRE, S).

Shrub compact subspreading, rarely sparse and erect, 150–250mm tall, much branched single-stemmed reseeder. **Branches:** numerous main branches ending in inflorescences; occasional secondary branchlets not at every node, 3–6(–10)mm long, often cernuous, terminating in an inflorescence; stems covered with stiff dense short hairs and long gland-tipped hairs; internodes 2–4mm long. **Leaves** 4-nate, usually subspreading but spreading in shady conditions, $\pm 2.0 \times 0.6$ mm, narrowly elliptic-lanceolate, acute, adaxially and abaxially slightly rounded and flattened towards the base with rounded or subacute margins, covered with very short fine hairs, ciliate with a few long sticky gland-tipped hairs and one apically, sulcus narrow and open at base; petiole ± 0.5 mm long, finely and shortly hairy. **Inflorescence:** **flowers** 4-nate in 2(1) whorls at ends of main and secondary branches, umbel-like; pedicel ± 1.2 mm long, basally curved, finely hairy; **bract** partially recaulescent and approximate to the

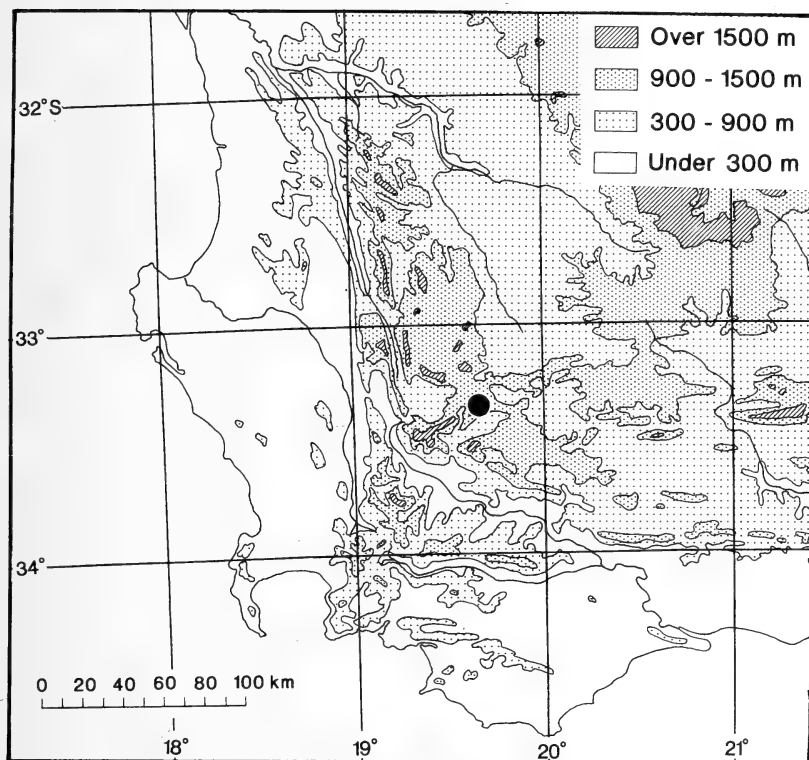


Fig. 4. Known distribution of *Erica filialis*.

calyx, sometimes subapproximate, $\pm 1.0 \times 0.6$ mm, elliptic, covered with short fine hairs at base and apex, margins with a few shortly stalked sticky glands and one larger one apically, green to dark red; **bracteoles** 2, approximate to calyx, $\pm 0.8 \times 0.6$ mm, like the bract except the glands with shorter stalks. **Calyx** 4-partite; segments adpressed to the corolla, $\pm 1.0 \times 0.8$ mm, ovate, greenish to dark purple, shortly and finely hairy in the mid and basal region, margins with large sticky glands these mostly sessile sometimes very shortly stalked, apical gland often larger. **Corolla** 4-lobed, $\pm 2.0 \times 1.8$ mm, urceolate to cyathiform, dark purple occasionally paler, glabrous, very sticky; lobes erect to slightly spreading, $\pm 0.5 \times 1.0$ mm, subacute to emarginate, entire. **Stamens** 8, free, included; filaments ± 1.2 mm long, straight, glabrous, white; **anthers** bilobed, erect, dorsally attached, elliptic in outline adaxially, appendiculate, spurs narrow ± 0.5 mm long, pointing adaxially, glabrous; thecae $\pm 0.8 \times 0.5$ mm, obliquely elliptic in outline laterally, light brown, glabrous; pore two thirds length of theca;

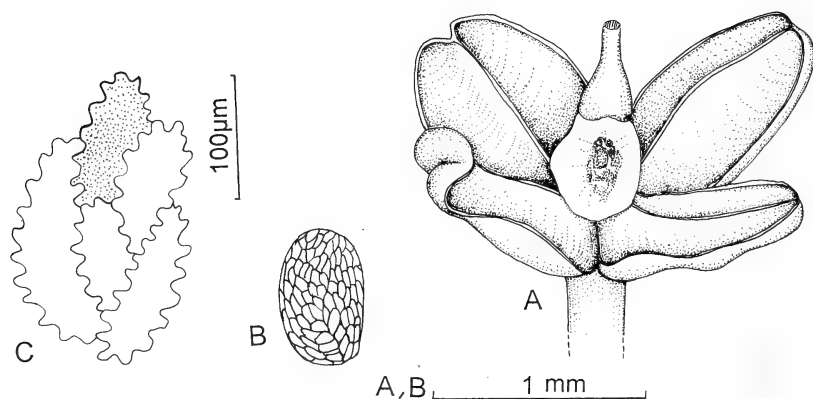


Fig. 5. *Erica filialis*. A, capsule; B, seed; C, testa cells. All drawn from the type, *Oliver 11300*.

©Inge Oliver

pollen in tetrads. **Ovary** 4-locular, $\pm 0.5 \times 0.7$ mm, depressed globose, slightly emarginate, finely hairy to glabrescent, with no nectaries; ovules 3 or 4 per locule, suberect from a central placenta on the axis; **style** 0.8–1.2 mm long, manifest to exserted, glabrous; **stigma** large peltate, blackish purple. **Fruit** a dehiscent capsule, $\pm 1 \times 2$ mm, valves spreading to $45\text{--}70^\circ$, septa equally on columella and valves; **seeds** $\pm 0.7 \times 0.4$ mm, irregularly ellipsoid, shallowly reticulate, cells $\pm 100\text{--}180 \times 50\text{--}70$ μm, with jigsawed anticlinal walls and numerous small pits in the inner periclinal walls. Figures 2, 3 & 5.

PARATYPES: WESTERN CAPE.—3319: (–BC), Hex River Mtns, Matroosberg, head of Spekrivierskloof, 1900 m, 14-09-1999, *T.N.Oliver in NBG 345124 (NBG)*; *ibid.*, 2000 m, 19-08-1999, *E.G.H. & I.M.Oliver 11301 (NBG, PRE)*.

Placing Heathers on the “Tree of Life”

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Since ancient times, mankind has tried to classify living things into groups of similar organisms. These classifications used various criteria, mostly visual ones – if two things look similar then let’s put them in the same group. This simple system works well in most cases, but not always; for example dolphins and whales superficially resemble fish but in fact they are not even closely related to fish. The first really scientific attempt at classification was made by the Swedish botanist Carl von Linné (also known as Linnæus) in the eighteenth century. Linné’s approach to classification (based on studying the reproductive systems of different organisms) formed the basis of modern taxonomy and his naming system (the familiar genus–species pair of Latin names) is still in use today – indeed Linné coined most of the scientific names used for the European heathers (*Erica arborea*, *E. australis*, *E. carnea*, *E. cinerea*, *E. ciliaris*, *E. multiflora*, *E. scoparia*, *E. tetralix*, *E. umbellata* and *E. vagans*).

Recently, however, radically new methods for comparing and classifying organisms have been developed. These new methods promise to be much more generally applicable than the traditional methods and should give us a much clearer picture of how living things relate to each other. In this short article, we are going to try and briefly explain these new methods and show how they are being used to reconstruct the history of life on Earth.

All living things on Earth have at least one thing in common: all their hereditary characteristics are stored as Deoxyribose Nucleic Acid, more familiarly known as DNA. DNA is a polymer consisting of a long chain of chemical groups (called “bases”) joined together like beads on a string. DNA contains four different bases, generally referred to by the letters A, C, G and T, that can be joined in any order to form a “sequence” that spells out the characteristics of the organism in question. This sequence is read as a code (the “genetic code”). One can compare the DNA bases to an alphabet and the genetic code to a language; this article is written using the so-called Roman

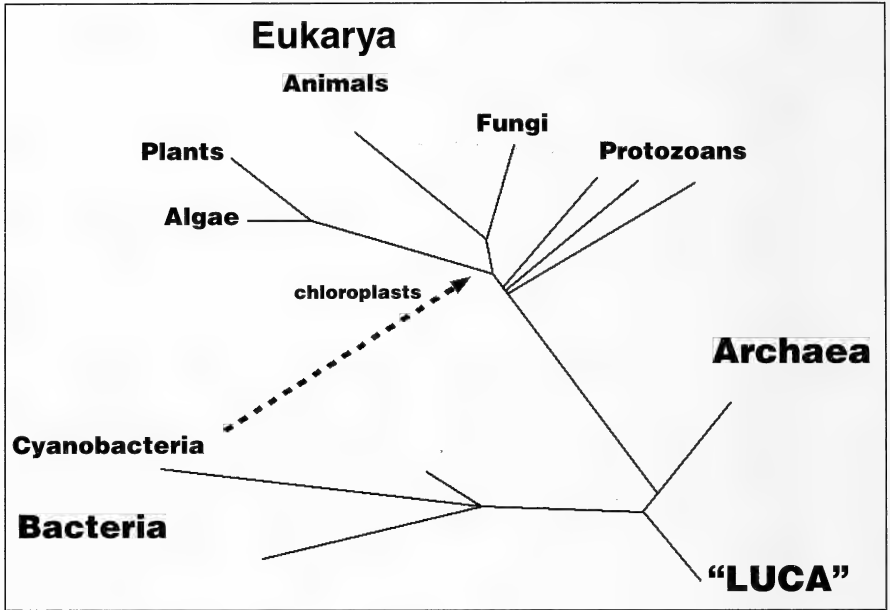


Fig. 1 The "Tree of Life"

alphabet containing 26 letters and is coded in English, whereas a DNA sequence is written in the 4-base DNA alphabet and is coded using the genetic code. What is absolutely remarkable, when one thinks of the huge variety of alphabets and languages that exist, is that all living things use the same DNA alphabet and the same genetic code. This is very strong evidence that all living things are related and that they probably all derive from an ancient common ancestor. From a practical point of view, it also means that one can compare DNA sequences from different organisms and one can count the differences between the sequences to get an idea of how closely related the two organisms are. An advantage of this approach is that it is mathematically rigorous and can quantify the differences between two organisms. This is quite simply impossible to do objectively with traditional morphological comparisons. A second important advantage is that as all organisms contain DNA, exactly the same methods can be used to compare heathers to rhododendrons, or heathers to humans. Scientists all over the world are now using DNA sequencing techniques to obtain the data needed to provide as complete a classification as possible of all living things, the so-called Tree of Life (Figure 1).

LUCA

The Last Universal Common Ancestor was a single-celled DNA-containing organism that used the universal genetic code and lived on Earth 4,000,000,000 years ago. What exactly it looked like, how it lived, and what existed before it, no-one knows with any certainty.

Soon after LUCA, life on Earth split into three groups, Bacteria, Archaea and Eukarya. All multi-celled organisms (plants, animals, fungi) belong to the Eukarya.

The origin of plants

One of the most obvious differences between most plants and fungi or animals is that the vast majority of plants are green. The green colour comes from chlorophyll pigments contained in small compartments ("chloroplasts") in the leaf cells. Chloroplasts contain their own DNA, and from the sequence of this DNA it is clear that chloroplasts were once free-living bacteria similar to present-day cyanobacteria (the familiar, but misnamed, "blue-green algae"). Plants thus arose about 600,000,000 years ago when a simple single-celled member of the Eukarya engulfed and then incorporated a cyanobacterium. This first plant would have resembled a single-celled pond alga. Over time, these primitive plants evolved to become more complex colonial algae, and then, about 500,000,000 years ago, one of these algae made the transition from aquatic to terrestrial life. The DNA sequence data suggest that the first land-plants probably resembled present-day liverworts. From these primitive land-plants arose, in quick succession, hornworts, mosses, horsetails, ferns and the first seed plants, probably not dissimilar to cycads. From these cycad-like plants arose other seed plants, notably conifers and flowering plants, nowadays the dominant groups of land plants. DNA sequence data suggest that the plant that is most closely related to the first flowering plants is a little-known genus, *Amborella*, from New Caledonia. Ancient families of flowering plants include water-lilies (Nymphaeaceae), magnolias (Magnoliaceae) and laurels (Lauraceae).

The diversity of flowering plants

Flowering plants have been astonishingly successful, taking over much of the earth's land surface since they first appeared during the Cretaceous Period, about 100,000,000 years ago. Fairly early on they split into two major groups, the Monocotyledons (grasses, bamboo, irises, etc.) and the Eudicotyledons. The "Eudicots" further diversified into two major groups, the rosids and the asterids. The latter group contains several important orders including the

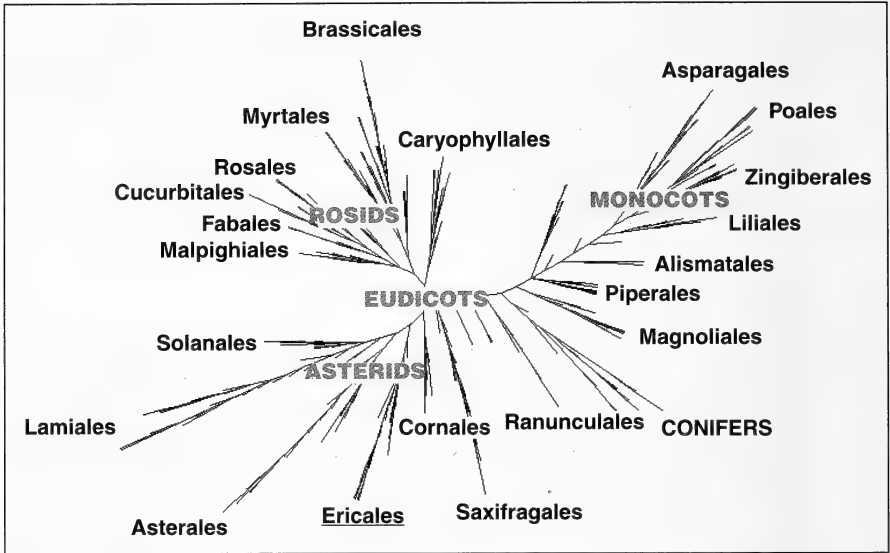


Fig. 2. The diversity of seed plants.

Solanales (potato, tomato, etc.), the Lamiales (mint, nettle, etc.), the Asterales (daisy, sunflower, etc.) and the Ericales, to which all ericaceous plants belong.

Ericaceous plants

In addition to the Ericaceae, the order Ericales contains many other families of related plants. Amongst the families closely related to Ericaceae are primulas (Primulaceae), busy-lizzies (Balsaminaceae) and the insect-eating pitcher-plant *Sarracenia* (Sarracenineae). The closest living relatives to the Ericaceae are a group including the wintergreens (*Pyrola*). Within the Ericaceae, the DNA sequence data suggest that apart from a few primitive genera (*Arbutus* (strawberry tree), *Arctostaphylos* (bearberry)), the family can be divided into two groups (Figure 3). One group includes *Lyonia*, *Andromeda*, *Gaultheria*, *Vaccinium* (bilberry, cranberry), *Oxydendrum* and various Australian heaths (*Epacris*, etc.). The second group includes heaths (*Erica*, *Calluna* and *Daboecia*), *Empetrum* (crowberry), *Rhododendron* (including the azaleas), *Cassiope* and *Phyllodoce*. Within this group it is reasonably clear that *Erica* species form a single well-defined group and that their closest living relative is *Calluna vulgaris*.

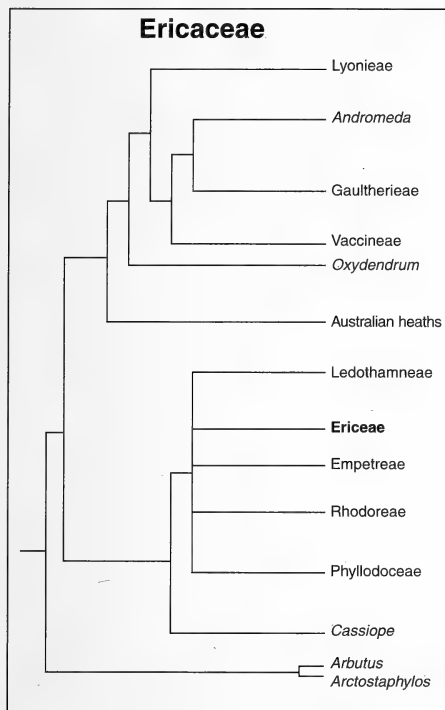


Fig. 3.

Apart from a few primitive genera (*Arbutus* (strawberry tree), *Arctostaphylos* (bearberry)), the Ericaceae can be divided into two groups. One group include *Andromeda* and *Vaccinium*, the second group include heaths (*Erica*, *Calluna* and *Daboecia*), *Empetrum* (crowberry), *Rhododendron* (including the azaleas), *Cassiope* and *Phyllodoce*

the European species most closely related to the South African species. If true, this scenario would imply that the incredible number and variety of *Ericas* in South Africa results from a relatively recent "explosion" in the number of species. What might have caused this sudden increase in diversity will be an interesting subject for future research.

Within *Erica*, the DNA sequence data is starting to reveal an interesting story (Figure 4). Amongst the European species, *Erica manipuliflora*, *Erica terminalis* and *Erica scoparia* form a group, as do *Erica vagans* and *Erica multiflora*. Rather surprisingly, there is no evidence for a close relationship between *Erica carnea* and *Erica erigena*, despite their morphological similarities. More data are required before these different relationships can be described with real confidence.

Most of the European heaths can be clearly distinguished from the South African ones, but a few species including *Erica sicula*, *E. spiculifolia* (*Bruckenthalia spiculifolia*), *E. carnea*, *E. australis* and especially *E. arborea* are more closely related to the South African species. The data obtained so far strongly suggest that *Erica* arose in Europe and spread south into Africa, rather than the other way. The species that made the journey from Europe to Africa was probably *E. arborea*; not only is *E. arborea* the only species to grow wild in Europe and in sub-Saharan Africa, it is also

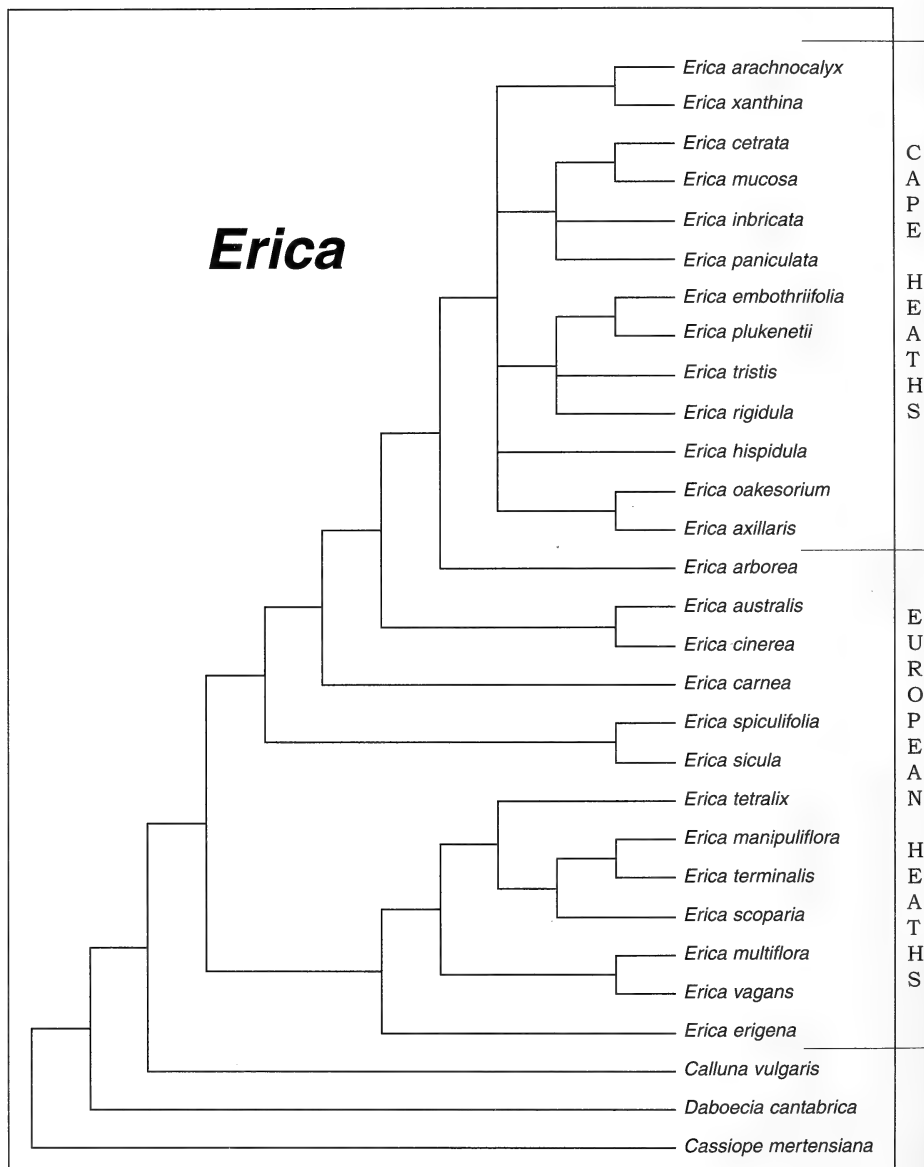


Fig. 4. A family tree of some of the *Erica* species

This tree is based on preliminary experiments and some of the relationships between species may change as more data becomes available. However, the major groupings are unlikely to alter significantly.

Obtaining DNA sequence data

The DNA inside living organisms is mixed up with many other chemicals that make it difficult to work with. To sequence DNA, it first has to be purified. Here is a typical recipe for purifying DNA from plants:

1. Pick about 1g of young leaves
2. Freeze them in liquid nitrogen
3. Grind them to a powder in a mortar and pestle
4. Mix the powder with a solution that dissolves the DNA
5. Get rid of most of the contaminants from the DNA solution by mixing it with organic solvents (usually phenol and chloroform)
6. Precipitate the DNA from solution by adding salt and alcohol
7. Centrifuge to recover the (relatively) clean DNA as a pellet

Purified DNA can be kept in a freezer for several years.

DNA purified in this way contains all the sequences present in the plant; it is still a very complex mixture, too complex for our current technology. To make things easier, the next step is to “amplify” one particular sequence millions of times. This is done using a fairly simple method known as the **Polymerase Chain Reaction** (or **PCR**) first developed in 1985 (this technique has had such an important effect on biology that the inventor was rapidly awarded a Nobel Prize). The sequence of bases in the amplified fragment of DNA can be obtained rapidly and simply using an automated sequencing machine.

Unfortunately, these high-tech methods are out of reach of the amateur botanists who have made such important contributions to taxonomy in the past. At a rough guess, it would cost about \$100,000 to equip a laboratory with the machines needed for automated PCR and sequencing.

Obtaining the sequence data is only half of the problem; now the sequences from different plants need to be compared, the differences noted, and attempts made to reconstruct the family tree of the plants being studied. The amount of data means that all this analysis has to be done by computer. The computing power needed grows very quickly with the number of sequences being compared. For comparing a few sequences, a home PC is quite adequate and as the software needed is mostly freely available via the Internet, anyone can have a go. However for serious studies of large numbers of sequences, enormous computing power is required. The family tree in Figure 2 took the equivalent of about a year's *continuous* calculation on a Sun workstation !



Fig. 1. *Calluna vulgaris* 'Grönsinka' (centre) (see page 26).



Fig. 2. *Calluna vulgaris* 'Peggy' (foreground) (see page 25).

Hardiness and heathers – a Swedish view

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“Hardiness” is a word usually used as a measure of a plant’s ability to withstand cold, but climate conditions can be adverse in many ways. Summer heat, frequent periods of drought or excessive rainfall may also stress plants beyond their capacity to survive.

Before Winter a plant’s hardiness increases with falling temperature and decreasing light. A sudden cold spell in Autumn may cause damage to plants at a temperature which they can withstand easily during the Winter. Severe night frost after sunny Spring days is equally harmful. When we in Sweden cover plants it is not against cold. We protect against desiccating winds, and to prevent plants from starting into growth too early in Spring. Warmth and increasing light cause loss of hardiness. Where late night frosts are expected, tender plants should be kept “sleeping” over the period of risk.

Whether a plant survives or not depends on so much more than low air temperatures. In the disastrous winter of 1995–1996 we had long-lasting cold without snow. The cold was not severe, occasionally down to -14°C , but the ground was frozen for five months and the plants dried out. We lost practically all our heathers (800 plants) except for *Erica carnea* and *E. spiculifolia* which all survived. This does not prove that these ones are so much hardier, only that they are considerably more drought resistant than other heather species. However, it may be that their roots are hardier than the roots of, for example, *Calluna* which are thought to resist -8°C .

The growth condition of a plant when the cold sets in is important. Winter temperatures must be seen in relation to Summer temperatures and the length of the growing season. I have understood that *Calluna vulgaris* ‘H. E. Beale’ and its offspring are often successfully grown in areas with winters as cold as ours, or even colder. The reason must be that they are growing at a latitude with much longer summers which allow the shoots to ripen before Winter comes. Late cultivars are usually of no value for us. Thus none of the “Beales” should be grown in Sweden.

Generally speaking, early plants are hardier than late ones. Cultivars with tall, elegant flower spikes, which need a long growing season, are less suitable here. That is the reason why the best double-flowered *Calluna* here is ‘Radnor’,

which does exceptionally well. I have seen this cultivar in England flowering sparsely, while here it is often a pink "ball" with hardly any foliage visible. Its remarkable resistance to fungal diseases is an extra plus.

The earliest *Calluna* in our garden is 'Mullardoch', usually in flower by the end of June. As expected it is very hardy, and also one of the most interesting cultivars of *Calluna*. The unusually big white flowers are scattered over grass-green foliage on trailing, curly stems which, given time, form a beautiful carpet only a few centimetres high. This plant never fails to attract our visitors' attention. Also early and hardy is 'Caerketton White'.

Hairy leaves are often associated with drought resistance and also with hardiness. One can ponder why hairy *Calluna* plants are absent in the wild in Scandinavia but are relatively common in some parts of England and France. If hairy leaves help a plant to withstand cold, Scandinavian populations should have developed hairs! It is true that some of the hairy cultivars are remarkably hardy, like 'Silver Knight', 'White Knight' and 'Silver Queen', but they are fairly early too. So, as far as I can see hairy foliage adds nothing to their hardiness.

I have often found myself saying: "This is a plant for a harsh climate." But what do I mean by "a harsh climate"? A member from Cornwall would probably consider Scotland a cold area though from my point of view it has a fairly mild climate.

The hardiness zone map for Sweden comprises 8 climate zones, falling within the European hardiness zones 4 to 7. Only a small part of central Scotland is in zone 7 so all parts of the British Isles have a much milder climate than the narrow strip along the west and south coasts of Sweden.

Climate statistics indicate that wherever you live in Sweden (with exception for the two big islands in the Baltic Sea) you will experience temperatures of -26°C or lower, often considerable lower, at least once in a period of 50 years. The temperature records which my husband has kept for more than 30 years show that we have had temperatures below -20°C 76 times, and below -25°C ten times in those three decades. The record minimum was -27°C in February 1970. At that time there was only wild *Calluna* in our garden. Cultivars might have found life uncomfortable.

Autumn and Spring frosts are things my plants must be prepared for. During cold spells in Winter we usually have snow, but only *usually*.

What is said above is meant to give the reader an idea of the climatic conditions that each plant which I consider "hardy" has to face.

Only two heather species are native in Sweden, *Calluna vulgaris* and *Erica tetralix*. One would expect plants collected from the wild in our country to be hardy and suitable for climates like ours. Sadly we have made few



Fig. 3. *Calluna vulgaris* 'Gaia' (centre).



Fig. 4. *Calluna vulgaris* 'Sesam'.

contributions to the international register of heather cultivars, and even fewer plants have reached growers abroad. The most successful ones were not found in the wild, but are selections made by me from deliberate sowings. If seedlings survive and develop well in our garden they should grow anywhere in the British Isles. For use in Sweden they should be tested in areas colder than where we live.

Calluna vulgaris 'Kerstin' is well-known and needs no description. The foliage plant 'Sesam' was "born" in the same seed-pot in 1983. It is less well-known but is becoming more widespread. Both are hardy in colder areas than ours. The recently registered *Calluna* 'Peggy', an early, low, foliage plant, is probably even hardier. Tests are continuing.

'Peggy' survived the Winter of 1995–1996. So did 'Gaia', which was also registered recently. It has dark foliage and dark lilac-purple flowers. Another survivor was 'Brita Elisabeth', a double-flowered, vigorous plant found in the wild in the late 1970s.

Most cultivars of Swedish origin are dwarfs. Two of them deserve to be more widely grown. They are the hardiest of all cushion plants I have been growing. 'Miniöxabäck' is a seedling from 'Öxabäck' which it resembles though smaller in all respects, a non-flowering plant with the dark foliage in

small clumps. I have never seen or heard of any reversion. (The pronunciation of the name may put obstacles in the way for wider popularity. After a merry discussion with Anne and David Small we came to the conclusion it may be rendered as “meenien erksabeck”).

The other one is ‘Grönsinka’, a light-green cushion of mossy foliage. Occasionally it produced a few flowers. This plant was found in the European hardiness zone 5. The finder, the late Ellert Björklund brought the plant home to his wife saying “Isn’t this one as good as those plants you pay a lot of money for at your plant markets?” It was!

Many dwarfish *Calluna* were found by the late Mats Johansson in a gravel pit in southwest Sweden. They all revert badly. The only one of his collections which is of interest in the long run is ‘Matita’, a vigorous, broad plant with feathery olive-green foliage acquiring bronze tints in Winter. It is not unlike a conifer. Mats proposed the name Brimat as a combination of our names. I said “It is your plant so your name shall come first.”

The latest introduction is a double-flowered *Calluna* found in southeast Sweden in 1987. Why it has remained unknown until now is a story too long to be told here. It is a vigorous, open plant with tall flower spikes and clear, pale pink flowers. I had hoped it would prove earlier than familiar cultivars of a similar type, but, alas, it is late. The plant was named ‘Gunilla Uggla’, after the lady who found it. The name is probably a bit difficult for English-speaking people, but it is a beautiful plant.

Only one cultivar of *Erica tetralix* comes from Sweden. It is ‘Swedish Yellow’, found as a sport on a wild plant. It dislikes warm and wet conditions and performs best in somewhat exposed sites.

We are hardly satisfied when plants merely survive. I want plants to be long-lived, hardy and reliable, without the need for frequent “artificial resuscitation”. To date I have grown (and thus tested) about 650 heather cultivars, 420 of them *Calluna*. There are many beautiful cultivars of *Calluna* to choose from. The cultivars differ considerably in hardiness, which may reflect the unusual distribution of this species in a north-south direction. Some cultivars occasionally (when a mild Winter is followed by a good Summer) can be very good here, but not in the long run. I give them up. There are so many good, hardy cultivars. I see no reason to fuss over tender ones.

This is not the case with other heathers. *Erica carnea* and *E. tetralix* are hardy in the four mildest Swedish climatic zones. *E. vagans* and *Daboecia* can survive for a few years in zones I–III, but should have some protection. We can try *E. cinerea* in the two best zones but it is not reliable anywhere.

To those who successfully can grow all the “hardy” heather species I can only say “Congratulations!”

Taxonomic problems in the *Erica filipendula* complex

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Thus far in *Yearbooks* we have described several new species of *Erica* which had been recently discovered. Sometimes new species are described because of the reassessment of characters within a species complex where it is deemed that the disjunctions between elements warrant specific recognition.

Erica filipendula forms such a species complex, which we have recently investigated, in the herbarium and in the field. It can have short, bell-shaped flowers which may be yellow or pale to dark pink, or white turning pink, or have long almost tubular flowers which are white or yellow-green (Figure 1). These shapes and colours are well shown in Plates 13A and 13B in *Ericas in Southern Africa* (Baker & Oliver 1967). However, we have found there are several distinct entities within this complex species.

Erica filipendula was described by Bentham in 1839 based on a collection made by James Bowie somewhere at the Cape between 1816 and 1822. He was a gardener sent out by Kew to collect seeds. We know that the flower-type of this collection was the open-mouthed bell with long narrow sepals as in Figure 1B, but unfortunately do not know the colour of the corolla. In 1904 in *Flora Capensis* with more material at his disposal, Bolus recognized the large-flowered form that he and several others had recently collected as something different and he described it as var. *major* (Figure 1A) and he also separated the small-flowered form with white to pinkish flowers as var. *minor* (Figure 1C & 1D). He noted that 'these three forms, unlike as they appear at first sight, can hardly be separated specifically.' It must be noted that at that period, variety (*varietas*) was the taxonomic rank used below the species; subspecies came into use later with variety being relegated to a lower, less important rank.

In 1964 Dulfer, in his revision of the genus, separated off part of Bolus' var. *minor* as a distinct species, *E. globulifera* Dulfer (Figure 1D), based on size only. There are, however, problems with his selection of material and the remaining small-flowered forms and there are additional characters not noted by

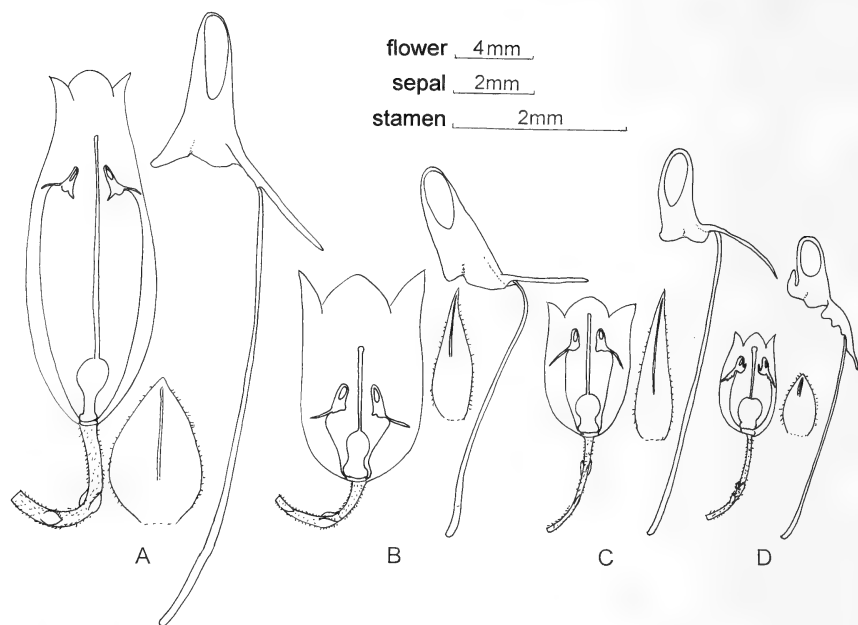


Fig. 1. Relationship of floral parts in A, *Erica penduliflora*; B, *E. filipendula* var. *filipendula*; C, *E. filipendula* var. *minor*; D, *E. globulifera*. Each part drawn to the same scale as given.

©Inge Oliver

Dulfer – broad anther appendages, broad sepals, and the upturned ‘nose’ on the anther. This we will be addressing in another publication. What concerns us here is the identity of the large-flowered var. *major*.

From the drawings in Figure 1 it is clear that the form figured as 1A, which matches var. *major* of Bolus, is distinctly different from the rest of the material figured due to the large, inflated, tubular corolla (12–18mm long), the longer stalk to the ovary, and the larger, broader sepals and is sufficiently distinct to warrant recognition at species level. *E. filipendula* var. *filipendula* (1B) and *E. filipendula* var. *minor* (1C) have long, lanceolate sepals and more open-mouthed, bell-shaped corollas 6–11mm long.

The position of the anthers within the corolla is important with 1A and 1B being very different but with 1A similar to 1C and 1D. This is clearly linked to the pollinating agent. We postulate that the long-flowered 1A is pollinated only by small sunbirds and that the short-flowered forms with more open corollas are pollinated by bees and other foraging insects, which can reach the supply of nectar. They would not be able to derive any rewards from a visit

to the large-flowered form and therefore no pollination would occur. This is only possible via the long-beaked/tongued sunbirds. The position and size of the 'noses' in the different forms is also variable and unusual and is part of the pollination syndrome where the anthers are held at the right position within the corolla (note the size and angle of the anther appendages). There are a number of species in the genus which have wide-open bells with the anthers placed towards the base of the flower. This feature we postulate is tied up with the type of insects involved in their pollination and is an aspect of the ericas which needs careful investigation.

We therefore describe this species here with the name *Erica penduliflora* seeing that it has loose, pendulous flowers – more so than in *E. filipendula* itself. Since Bolus included some five syntypes in the protologue of his var. *major* with no indication of which colour variant they were, we have chosen to describe the taxon as a new species. Bentham incorrectly assigned this species to *E. broadleyana* Andr. which was a horticultural hybrid raised in England in the early 1800s.

Erica penduliflora is a beautiful species in the wild with the typical colour form being pure white and contrasting very strongly with the duller coloured fynbos vegetation (Figure 5). Large bushes covered with many stunning synflorescences up to 300mm long are almost unequalled in the genus. It must be noted that each flower is a 1-flowered inflorescence borne on an extremely reduced lateral branchlet in the axil of a leaf on the main branch. The little branchlet bears highly reduced leaves (see lower right-hand portion of Figure 2C). This typical form appears to be confined to the quartzitic sandstone hills between Elim and Viljoenshof and Wolthuiskop in the west, an area where it used to be common (Figure 4). The populations have been reduced by the encroachment of alien vegetation, commercial flower picking and by the ploughing of the veld for the planting of orchards of proteas for commercial purposes or shrub removal for creating pastures.

Not far away on the flats in much drier areas is the form with yellow-green flowers growing in remnant vegetation on a mixture of sand and laterite typical of 'Elim fynbos'. The bushes are as large as those of the type but the synflorescences are mostly shorter. Towards Geelkop (Figure 7) and at Zoetanyenberg the yellow-green form grows in pure sand but sometimes on the flats in laterite soils. In the area west of Melkbospan it grows together with the small-flowered form of *E. filipendula* var. *minor* (Figure 1C) with its white to pink flowers in the same synflorescence. No hybrids were recorded between the two species in these populations.



Fig. 2. *Erica penduliflora*. A, flowering branch; B, stem, showing marked infrafoliar ridges; C, flowering branchlet, showing the base of a single flower on a very reduced branchlet (inverted); D, leaf, adaxial view; E, flower; F, bract; G, bracteole; H, stamen, side, front and back views; I, stalked ovary; J, stigma. All drawn from the type, *Oliver 11245*. ©Inge Oliver

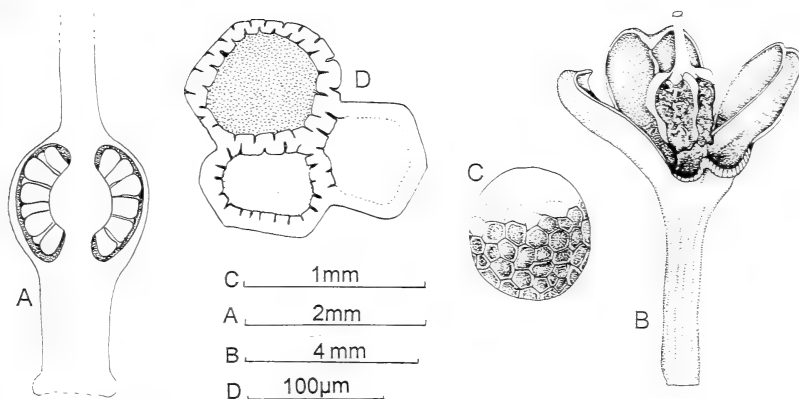


Fig. 3. *Erica penduliflora*. A, ovary cut open longitudinally; B, fruit; C, seed; D, testa cells. A, drawn from the type, Oliver 11245; B–D, from Williams 15. ©Inge Oliver

Many of the species confined to this whole area, including the beautiful *E. regia* Bartl. and its colour varieties, are in our opinion endangered due to poor farming practices and lack of environmental conservation strategies.

The plants of *E. penduliflora* flower over a long period from February to July.

***Erica penduliflora* E. G. H. Oliv., sp. nov.**

Ericae filipendulae affinis sed corolla multo longiore alba vel flavoviride (non flava vel rosea), ore corollae angustiore (non corollam aequanti), sepalis ovatis (non lanceolatis), ovario longiore stipitate (non breve) differt. Figurae 2, 3 & 6.

TYPE: SOUTH AFRICA, Western Cape, 3419DA, Bredasdorp Dist., Viljoenshof, hills NW of, 120 m, 12 May 1999, white flowered, E.G.H. & I.M. Oliver 11245 (NBG, holotype; BM, BOL, K, MO, NY, P, PRE, S).

E. filipendula Benth. var. *major* Bolus in *Flora capensis* 4: 56 (1904). Syntypes: Bredasdorp, Div.; fairly abundant on the downs between Elim and Ratel River, 300–600ft, Guthrie 3786 (BOL, NBG!); *ibid.*, Bolus 8452 (BOL, NBG!, PRE); *ibid.*, Schlechter 7618 (BOL, NBG!, PRE) & Schlechter 7726 (BOL); *ibid.*, MacOwan [Schlechter] in *Herb. Aust. Afr.* 1920 (BOL!, SAM!).

E. broadleyana Benth. in De Candolle, *Prodromus* 7: 637 (1839) non Andrews, *Heathery* vol. v, t. 206 (1809).

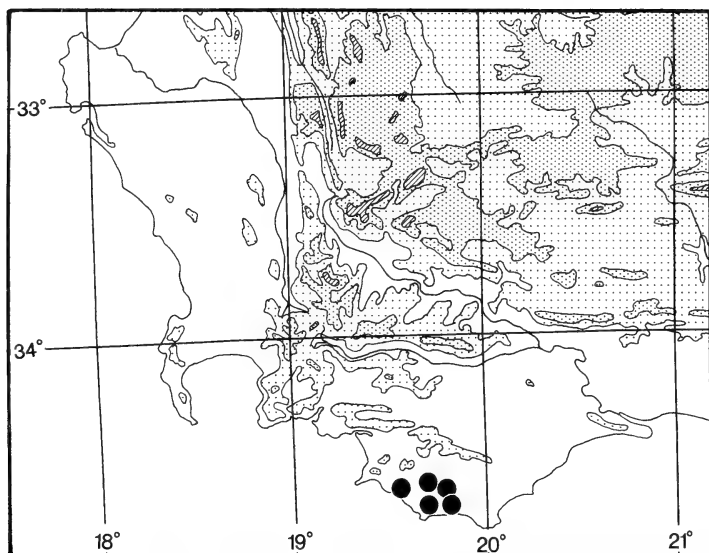


Fig. 4. Known distribution of *Erica penduliflora*.



Fig. 5. *Erica penduliflora*. Type population above Viljoenshof.



Fig. 6. *Erica penduliflora*. Close-up of synflorescences of type material.

ovate to elliptic, white, glabrous, margins shortly ciliate, no sulcus; **bracteoles** 2, adpressed, $0.7\text{--}1.0 \times 0.9\text{mm}$, otherwise like bract. **Calyx** 4-partite, adpressed to corolla; segments $3.5\text{--}4.3 \times 2.0\text{mm}$, laterally imbricate, the inner laterals often longer than the outer two, ovate, apex subacute, glabrous, white, keeled, sulcus two thirds length of segment, narrow, margins entire and shortly ciliate. **Corolla** 4-lobed, $\pm 12\text{--}18 \times 5\text{--}6\text{mm}$, tubular-ovoid/ellipsoid, slightly contracted at the mouth, glabrous, smooth, white or yellow-green; lobes $\pm 1.5 \times 2.0\text{mm}$, rounded, erect to semispreading. **Stamens** 8, free, included; filaments $\pm 12\text{mm}$ long, (two thirds length of corolla), linear, curved adaxially at apex otherwise straight, glabrous, white; **anthers** bilobed, dorsally attached, elliptic in adaxial outline, thecae erect, $\pm 1.4 \times 0.5\text{mm}$, lanceolate in lateral outline, prognathous with a marked acuminate adaxial 'nose' at base, dark brown, appendages thin, narrow, about as long as theca and attached for one third to half their length to apex of filament, with one or two short lateral teeth, white; **pollen** in tetrads. **Ovary** 4-locular, $\pm 3.0 \times 1.5\text{mm}$ with distinct $\pm 1.5\text{mm}$ long stipe, globose glabrous green, with distinct basal nectaries; ovules ± 20 per locule spreading from a centrally placed placenta on axis; **style** included, filiform, glabrous; **stigma** simple-truncate with slightly raised stigmatic lobes. **Fruit** a dehiscent capsule, $\pm 8 \times 6\text{mm}$ with $\pm 4\text{mm}$ long stalk, the valves opening to $\pm 45^\circ$, valves variably 40–60% from base to apex on columella and/or valve,

Shrub erect, well branched up to 1.5m tall, single-stemmed reseeder. **Branches:** a few thick main branches terminating in 3–8 secondary branches 100–250mm long, all with marked infrafoliar ridges, glabrous; numerous tertiary branchlets $\pm 1\text{mm}$ long, puberulous, with two 5mm long leaf-like prophylls and two whorls of 1mm long coloured bract-like leaflets soon turning brown, these branchlets all terminating in a single-flowered inflorescence. **Leaves** 4-nate, erect, incurved, imbricate, $6\text{--}10 \times 1.2\text{mm}$, linear, adaxially flattened, abaxially rounded, margins acute scarious, apex acuminate; petiole $\pm 1\text{mm}$ long, adpressed, glabrous. **Inflorescence:** **flowers** 1, at ends of very short tertiary branchlets, these numerous, arising from every node and aggregated along the secondary branches into spike-like synflorescences with oldest flowers terminal in the 'spike'; pedicel $\pm 6\text{mm}$ long, curved, with dense very short spreading to reflexed hairs, white; **bract** partially recaulescent about one quarter up pedicel, adpressed, $\pm 0.8 \times 0.7\text{mm}$, broadly



Fig. 7. *Erica penduliflora*. Population of yellow-green form in the Geelrug area.

brown with darker base and stalk; seeds ± 0.7 mm long, subglobose, reticulate, brown, testa cells $100\text{--}120 \times 80\text{--}100$ μm , subequally hexagonal with thickly sclerified, highly convoluted anticlinal walls and numerous small pits in inner periclinal wall. Figures 2, 3 & 6.

PARATYPES (a selection of material examined): WESTERN CAPE.—3419:

WHITE COROLLA: (–DA), hills between Elim & Ratel River, 300 ft, July 1895, *Bolus* 8452 (BOL, NBG, PRE); common about Elim, 3–600 ft, July 1895, *Guthrie* 3786 (BOL, NBG); hill-slopes N of Viljoenshof, April 1966, *Oliver in STE* 30151 (NBG, NY, PRE); *ibid.*, E.G.H. & I.M.Oliver 11301 (NBG, PRE); 250 m, 21–04–1983, *Schumann* 99 (NBG); Kouriver Mtns, 10–05–1929, *de Villiers in STE* 10564 (NBG); S slopes of Wolfhuiskop, 4 km NE of Pearly Beach, 70 m, 30–04–1981, *Burgers* 2700 (NBG).

YELLOW-GREEN COROLLA: (–DB), Viljoenshof area, flats just north of Vlooiakraal, 50 m, 12–05–1999, E.G.H. & I.M.Oliver 11246 (BM, K, NBG, NY, PRE); Viljoenshof-Blomfontein, April 1966, *Oliver in STE* 30150 (NBG, PRE); Geelrug; E slopes & flats, 200 ft, 29–03–1971, *Oliver* 3348 (NBG, PRE); Voëlvlei to Hangnes, Geelrug, 250 ft, 12–04–1982, *Oliver* 7680 (NBG, PRE); Voëlvlei area, slopes E of Geelrug Beacon, 80 m, 12–05–1999, E.G.H. & I.M.Oliver 11248 (NBG, PRE); Zoetanyenberg, W end above Suur-en-Soet, 500 ft, 29–03–1971, *Oliver* 3359 (NBG, PRE); *ibid.*, W end just E of Melkbospan, 40 m, 12–05–1999, E.G.H. & I.M.Oliver 11253 (NBG).

COLOUR NOT RECORDED: (–DA), Elim, 400 ft, 18–04–1896, *Schlechter* 7618 (BOL, NBG, PRE); *ibid.*, 250 ft, 05–1897, *Schlechter in Herb. Norm.* 1902 (BOL, SAM); without locality, *Thom* 1094 (BOL fragm. ex K).

Dr Charles Stuart's heather rediscovered in Connemara, Ireland

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What are the chances of finding the proverbial needle in the haystack? Of course, you never actually go looking for the needle. Plain good luck is what is needed!

I was in Connemara for a few *hours* on Saturday 29 July 2000, primarily to photograph the beautiful Irish (or American) lady's tresses orchid, *Spiranthes romanazoffiana*, which only blooms during a short period towards the end of July. I found the orchid on the shore of Lough Corrib, and, as it was a good day, decided to press on towards "The Bog Road" at Roundstone to collect a few sprigs of *Erica mackaiana*, *E. tetralix* and *E. x stuartii* so that I could make "scans" of them for a little book I am writing on the flowers of western Ireland.

I reached the Craiggamore area – the type locality for *E. mackaiana* – and was immediately captivated by the sight of the white waterlily flowers floating on indigo-blue loughs. So, I spent a few minutes snapping photographs of Errisbeg, the mountain beyond Craiggamore, and the belilied loughs. Then, I drove on and parked where I usually park on a peat-cutters patch by the side of the road just beyond Craiggamore.

Erica mackaiana was in prime condition, full bloom. I wandered over to the peat workings on the north side of the road admiring the hummocks of the heather. As an aside, it was very noticeable that almost every bell had been pierced and robbed by bees. I gathered the few springs that I needed, checking each one for signs of the hybrid, *E. x stuartii*. Content with my little bouquet, I headed back the few yards over the cut-over bog towards the car.

I was looking the heather hummocks as I walked, when I noticed – out of the corner of my eye, as we might say – something different yet very familiar. I really could not believe my eyes – being short-sighted, I knelt down and carefully pushed aside a few leaves of grass. There was *no* mistake! There was a single shoot topped by the extraordinary flowers that are characteristic of the plant we all know as *E. x stuartii* 'Stuartii', beetroot



Fig. 1. Dr Charles Stuart's heather with Craiggamore in the background.

and white. I poked around and noticed five more shoots in bloom, and what appeared to be quite a number of others that were still in bud.

I did not have my camera with me, as I had not intended taking photographs of the heathers, but this was different! I know only too well how difficult it is to re-find a plant on those vast peatlands. But, fortunately, there was a small rock nearby which I turned on its end to mark the patch. I quickly went to the car, took out my camera, turned through 180°, and muttering a prayer to whatever deity guides wanderers in trackless lands, headed back towards the heather. After a moment of panic, when my upturned stone seem to vanish among a veritable mountain of stone, I spotted it and re-found the plant.

On occasions like this photographs have to be taken and the only appropriate stance is horizontal! So, lying on the soft, wet peat, I photographed the first shoot I had seen – the driver of a passing car sounded the horn in distinct derision! – to prove that the plant exists.



Fig. 2. Close-up of the find.

LONGEVITY OF A HEATHER CLONE IN THE WILD

There is little doubt in my mind that the plant I saw and photographed is indistinguishable from the clone cultivated since 1890 as *E. x stuartii* 'Stuartii', alias *E. stuartii*, olim *E. x praegeri* 'Stuartii'. I am prepared even to say that it is the *same clone*.

Two points arise from this. The first is that it is possible for distinctive clones of *E. x stuartii* – and almost certainly also of *E. mackaiana* – to persist in the wild for more than a century. Indeed, given the fact that both these plants reproduce mainly by vegetative means, they may

well survive for many centuries. The seed that produced *E. x stuartii* 'Stuartii' could therefore have germinated hundreds of years ago, and the strange plant persisted by vegetative means ever since.

There are active peat-banks in the immediate vicinity, and peat is still cut nearby. Therefore, the ground-level where I saw the plant is perhaps a few feet lower than it had been in 1890. Both *E. mackaiana* and *E. x stuartii* have an exceptional capacity to re-sprout from cut root-ends; they sprout profusely along the old peat workings. Thus even if the aerial shoots are chopped off, a clone can persist and regenerate from its root-stock. When a new "seam" of peat is started, the first thing that happens is that the topmost layer of peat, containing the living plants, is "shaved off" and discarded nearby. Thus a heather clone growing on the bog near a peat bank will have a chance to re-establish itself by sprouting from the discarded sods.

The second point is that it strongly suggests that the several collections of the fully double-blossomed plant, cultivated as *E. mackaiana* 'Plena', were gathered from the same clone, albeit separated by many decades. This particular aberrant heather was first found in 1869 by A. G. More, and again in 1901 by Dr Frank C. Crawford, and as recently as 1965 by Father Brennan and 1969 by Dermot Burke.

THOUGHTS ON DR STUART'S HEATHER

As I drove away from Craiggamore, with photographs "safe" in my camera and three tiny samples of the heather for pressing, I wondered idly if Dr Charles Stuart had stood on the very same spot as I had. He must have stood very close by, I would think, but probably not on the exact piece of peat.

Tom Pearce, Tom Pearce, lend me your grey mare,
 All a-long, down a-long, out a-long lee;
 For I want for to go to Widdicombe Fair;
 Wi' Bill Brewer, Jan Stewer, Peter Gurney, Peter Davy,
 Dan'l Whiddon, Harry Hawke, Old Uncle Tom Cobleigh and all,
 Old Uncle Tom Cobleigh and all.

And when shall I see again my grey mare?
 All a-long, down a-long, out a-long lee;
 By Friday soon, or Saturday noon, ...

Then Friday came and Saturday noon;
 All a-long, down a-long, out a-long lee;
 Tom Pearce's old mare hath not trotted home, ...

So Tom Pearce, he got to the top of the hill;
 All a-long, down a-long, out a-long lee;
 And he see'd his old mare down a-making her will, ...

So Tom Pearce's old mare her took sick and died;
 All a-long, down a-long, out a-long lee;
 And Tom he sat down on a stone and he cried, ...

But this ain't the end o' this shocking affair;
 All a-long, down a-long, out a-long lee;
 Nor, tho' they be dead, of the horrid career
 Of Bill Brewer, Jan Stewer, Peter Gurney, Peter Davy,
 Dan'l Whiddon, Harry Hawke, Old Uncle Tom Cobleigh and all,
 Old Uncle Tom Cobleigh and all

When the wind whistles cold on the moor of a night;
 All a-long, down a-long, out a-long lee;
 Tom Pearce's old mare doth appear ghostly white, ...

And all the night long be heard skirlings and groans
 All a-long, down a-long, out a-long lee;
 From Tom Pearce's old mare in her rattling bones,
 Wi' Bill Brewer, Jan Stewer, Peter Gurney; Peter Davy,
 Dan'l Whiddon, Harry Hawke, Old Uncle Tom Cobleigh and all,
 Old Uncle Tom Cobleigh and all.

Heaths & Heathers at Berrydown Nurseries, Devon

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Berrydown Nurseries was situated at 1,000ft above sea level on the northern edge of Dartmoor National Park, near Gidleigh in Devon. It was founded in 1980 by three directors, Tim Argles, Ray Tremeer and Dennis Wilkinson, the latter resigning after the first year.

The nursery consisted of a four-acre site sloping gently to the northeast. The soil consisted of a sandy free-draining loam with a low (acid) pH. This combined with an above-average rainfall seemed an all-round perfect environment for growing heathers. Berrydown's isolated position and difficult access meant that retailing direct to the public was not a realistic option. It was decided that mail order would be our best strategy.

At that time the main crop grown on the nursery was dwarf and slow-growing conifers, with the heathers restricted to one polythene tunnel. However, it soon became apparent that the heathers had considerable popularity as their sales outstripped that of the conifers by two-to-one.

Upon Dennis Wilkinson's departure the mail order side went into decline and a new strategy was needed in order to ensure success. As a result the heathers soon came to play a central role in Berrydown's development.

THE EARLY DAYS

Berrydown started with 8,000-10,000 mixed heathers in little 5cm pots. A rather motley collection of cultivars was propagated: *Calluna vulgaris* 'Cuprea', 'Foxhollow Wanderer', 'Radnor' and 'Robert Chapman'; *Erica carnea* 'Springwood White', 'Springwood Pink' and 'King George'; *E. cinerea* 'Purple Beauty'; *E. tetralix* 'Con Underwood' and *Daboecia cantabrica* 'Alba' and 'Purpurea'. It is apparent from this short list that we lacked depth and many of the more popular varieties. New stock needed to be acquired.

After much research and catalogue rustling, 80 new cultivars were added to the existing stock. Twenty plants of each were lined out in our newly created stock-bed. I well recall the surprise upon coming across cultivars like *Calluna vulgaris* 'Sister Anne' and 'Foxii Nana' for the first time. *C. vulgaris*

'Kinlochruel' and 'County Wicklow' performed in the early autumn, whilst the striking colours of *Erica carnea* 'Eileen Porter', 'Myretoun Ruby' and 'Ann Sparkes' helped brighten up gloomy winter days. In spring, the new growth of *Calluna vulgaris* 'Spring Cream', 'Spring Torch' and 'Winter Chocolate' caused a surprise. Finally, in summer *Erica cinerea* 'Pink Ice' and 'Velvet Night' and *E. x stuartii* 'Irish Lemon' and 'Irish Orange' created a tremendous effect. Over all the company's position stabilised, other outlets were found, and its heather sales flourished while those of conifers remained stable.

DABOECIA AT BERRYDOWN

I first came into contact with the genus *Daboecia* in the mid 1970s after being impressed by the amount and clarity of the flowers it produced. My knowledge of its cultivars extended no further than 'Bicolor', 'Alba', and 'Purpurea'.

At Berrydown we started with just *D. cantabrica* 'Alba' and 'Purpurea'. I felt certain that well grown they could prove popular. Consequently, a search for further new cultivars soon got underway. I brought in *D. cantabrica* 'Bicolor' and 'Praegerae' from my family's own nursery and we also purchased 'Alba Globosa', 'Globosa Pink', 'Hookstone Purple', 'Lilacina', 'Polifolia', 'Waley's Red', and then *D. x scotica* 'William Buchanan' and 'Silverwells'. These were all lined out next to each other in rows of 20, as our first major stock area. In the first years after planting they performed magnificently, producing rapid growth and superb flowers (particularly, if pruned after the first flush). Meanwhile the search for other cultivars continued and cuttings of 'Charles Nelson', 'Covadonga', 'Atropurpurea', 'Pink' and *D. x scotica* 'Cora', 'William Buchanan Gold' and 'Jack Drake' were purchased from Denbeigh Heathers. This ensured we had a well-rounded and almost complete collection.

With the earlier stock now maturing well and the new varieties growing-on, the future looked rosy. Then disaster struck. During the winter of 1983–1984, two to three weeks of freezing temperatures going down to -11°C produced complete defoliation and the apparent death of our entire planted stock of *Daboecia*. In April 1984, I cut these plants down to ground level as there was no sign of life. However, a carpet of *Daboecia* seedlings appeared to be growing well all around, and amongst, the devastated stock. Rather depressed at what looked like the total loss of our stock, I took little notice of this *Daboecia* carpet, as I still held out the hope that the original plants might recover from the base. In early May, a phone call from one of our clients in North Devon informed us that he too had lost 500 plants, but I optimistically told him "to hang on in there". But late frosts were making life even more difficult and by

the end of May no signs of life had appeared and my thoughts had turned to re-planting and protecting stock. Our client in the interval had given up, had dug up his plants and burnt them.

On 12 June, my partner Ray informed me that he thought he could see signs of life at the base of the *Daboecias*. Without looking, I dismissed this as being probably just seedling growth. Another seven to ten days passed – the ash trees still not in full leaf – Ray, it appeared, had not been seeing things for the original stock was showing wonderful signs of revival. Like many young juveniles, they ran without the need for steady progress, and after amazing growth the first flowers appeared in mid-July. Seven weeks after the first signs of recovery, one of the best displays I have ever seen of *Daboecias* was produced in mid-August.

Rather than being able to enjoy this *Daboecia* renaissance, another problem then arose. That *Daboecia* carpet had by this time become more of a *Daboecia* shrubbery! One of the keys to growing good stock is to keep it weed-, pest- and disease-free. Above all, weeds of a similarity to the stock can cause a minor disaster when it comes to taking cuttings, for example *D. cantabrica* 'Alba' suddenly appearing with purple flowers! As a young nursery, land availability was not a problem and it was decided to plant out 200–300 of the more interesting of these seedlings, for example the very vigorous and very dwarf forms. This was duly done and although kept weed-free it was generally ignored whilst the day-by-day running of the nursery continued.

One of the seedlings that had previously appeared in a batch of *D. cantabrica* 'Alba' was being propagated. It was a vigorous form with huge white bells that measured 20mm in length. Its weakness was that it tended to outgrow the 9cm pots and could easily collapse through excessive growth. Having grown on some 500 plants, it was decided that a name was needed. It came to be called (but the name was not registered) *D. cantabrica* 'Whitemoor Giant'. This name coming partly from its size, the fact that the flowers were white and that it came from the moor. On a more personal level, my parents had a farm at Doddiscombe Lee, near Exeter, called Whitemoor.

The *Daboecia* seedlings lined out in their strips in the field at Berrydown continued to grow. By this time the number of cultivars grown at the nursery had increased to 250–300. Both partners were fully aware of the dangers of naming and then registering cultivars solely on the grounds that they looked a bit different. Yet, by the summer of 1985, those seedlings planted out in 1984 were maturing and flowering freely. Decisions had to be taken and I went through them selecting and labelling about 20 for future evaluation and the remainder were, sadly, scrapped. A year later in 1986, our new stock area,

planted on potato ridges covered with Mypex (a woven polythene), was under construction. Five of the 20 were then selected and planted out in fives in a new bed. They were given the amazingly original names of Berrydown A, B, C, D and E, but again were not registered.

A year later a colleague from the horticultural industry visited the nursery and after he made complimentary comments about *D. cantabrica* "Berrydown B", I allowed him to have some material, but explained that it was a new cultivar and that as yet we had not registered it. Some years later it appeared in a catalogue named *D. cantabrica* 'Newberry'.

In the late 1980s, it was decided finally to come up with some proper names for A, B, C, D and E. At that time I was living in the small village of Sticklepath, near Okehampton, whose main claim to fame could arguably be that it was the home of one of the world's most famous folk-songs – 'Widcombe Fair'. Out of curiosity, I had done a little research into the origin and background of the song and it seemed appropriate to name these *Daboecia* cultivars after some of the various characters involved. Assuming that the basis of the story was true, when they had walked, or ridden from Sticklepath to Widcombe-on-the-Moor, they could have passed within a quarter of a mile of the nursery. That decision had the following result.

THE BERRYDOWN CULTIVARS.

D. cantabrica '**Tom Cobley**' (formerly "Berrydown A")

Flowers: Large white bells 1.5cm length; foliage mid-green; height 60cm; spread 80cm.

Remarks: similar to *D. cantabrica* 'Alba' and 'Alba Globosa' but all round larger and providing better ground-cover.

D. cantabrica '**Daniel Whiddon**' (formerly "Berrydown B"; syn. 'Newberry'; 'Newberryii', 'Berrydown Red')

Flowers medium size, rounded deep crimson bells, 1cm in length; foliage dark green, sticky to the touch; height 50cm; spread 60cm.

Remarks: possibly the best of the Berrydown introductions; similar to, but an improvement on, *D. x scotica* 'William Buchanan'. Sold under the name 'Newberryii' by Wains (Barton under Needwood, Staffordshire); 'Newberryii', see *Ericultura* 89 (1993): 8; also known as 'Berrydown Red', see *Yearbook of The Heather Society* 3 (10) (1992): 64 – a new name that was proposed to replace the Latin 'Newberryii' that contravenes the ICNCP (1995).

***D. cantabrica* 'Harry Hawke'** (formerly "Berrydown C")

Flowers small, pale lilac, rounded, 0.7cm in length; foliage small, mid-green; height 20cm; spread 45cm.

Remarks: the smallest of all the Berrydown cultivars, similar to *D. x scotica*.

***D. cantabrica* 'Tom Pearce'** (syn: 'Whitemoor Giant'; 'Dartmoor Giant')

Flowers large, white, 2cm long; foliage large, fresh green; height 80cm; spread 1m.

Remarks: the largest white *Daboecia* I have come across, but like many of the vigorous heathers it is not appropriate to pot-growing.

***D. cantabrica* 'Peter Gurney'** (formerly "Berrydown D")

Flowers large, elongated white bells 1.5cm in length; foliage large, mid-green; height 90cm; spread 45cm.

Remarks: a fastigate form, can look very elegant, but a little prone to damage from wind and snow.

***D. cantabrica* 'Jan Stewer'** (formerly "Berrydown E")

Flowers medium, rounded, plum-purple 1.2cm; foliage medium mid-green; height 45cm; spread 60cm.

Remarks: a neat tidy plant, very floriferous, certainly of potential commercial and landscape merit.

OTHER HEATHERS CULTIVATED AT BERRYDOWN

***Erica cinerea* 'Lilac Rambler'**

Flowers pale lilac, at times almost white, dependent on age; blooming early in the summer; foliage mid-green; height 30cm; spread 60cm.

Remarks: found in the early 1980s whilst clearing the Scoarhill Leet, the main and only water supply to Berrydown Nurseries. A genuine native of Dartmoor. Excellent plant, pest- and disease-free, very reliable; an interesting colour break; good ground-cover.

***Erica cinerea* 'Violet Rambler'**

Another form collected locally, but was not considered to be a good plant and was soon discarded.

***Calluna vulgaris* 'Sunset Special'**

Found in the early 1980s growing amongst a batch of 'Sunset'; it was felt that this was a stronger and more disease-resistant cultivar. So a number of years ago it was selected and propagated. The description was as for *Calluna vulgaris* 'Sunset'.

***Calluna vulgaris* 'Golden King'**

Although listed by Berrydown about 1984 this did not originate at the nursery.

Widcombe Fair: a note and the lyrics

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According to Harvey and St Leger Gordon (1953: 179) in their *The new naturalist* book on *Dartmoor* this famous song, although one of the few local ballads, is surprisingly seldom sung in the Widcombe district. They also noted that the version they heard on a solitary occasion in 30 years, differed considerably from that obtained by Baring-Gould at a farmhouse in Belstone and which is now in common circulation.

The song commemorates a mishap that overtook a tipsy cart-load of inhabitants visiting the famous commercial fair held on the moor. Widcombe Fair is held on the second Tuesday of September, but now is no longer essentially a cattle, sheep and Dartmoor pony sale.

It has been argued that there is no justification for connecting "Uncle Tom Cobleigh" with Widcombe, other than that he was a member of that unlucky party, for he has been identified as Tom Cobley, a substantial yeoman living at Spreyton. Spreyton is a village on the northern foothills of Dartmoor and north of the main road that skirts the edge of the moor. This is some ten miles or so north of Widcombe-in-the-Moor. His companions on the famous ride – Daniel Whiddon, Peter Gurney, Bill Brewer, Harry Hawke, Jan Stewer and the horse-owner Tom Pearce – all came from the same district.

Tom Cobley's native hamlet is reputed to be Colebrooke and he is said to have died at the end of the eighteenth century "at a great age". He disinherited his son – another Thomas – "for being too free with the girls" and left his estate to a nephew living in the neighbouring Parish of Butsford (W.G. Hoskins, 1972. *Devon*: 479) The graves of both "Uncle Tom" and his nephew – yet another Thomas Cobley – are in the churchyard at Spreyton.

The names of hardy heathers: proposals for conservation of cultivar names; trade designations; new cultivar names

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Publication of the four parts of volume 1 of the *International register of heather names* between August 2000 and December 2000 completes one stage in the production of a comprehensive register of the names used for cultivars of heathers which, for the purpose of the register, are deemed to comprise the genera *Andromeda*, *Bruckenthalia* (recently subsumed into *Erica*), *Calluna*, *Daboecia* and *Erica*. Work is now in progress on the second volume which will include the names of heathers from Africa, including cultivars derived from South African species, the so-called Cape heaths.

The *International code of nomenclature for cultivated plants* (ICNCP), the current edition being that published in 1995, lays out the principles that govern the formation and acceptability of the names of all cultivars – cultivated or garden varieties. The ICNCP also defines the role of an ICRA (International Cultivar Registration Authority). As ICRA for heathers since 1970, The Heather Society is not only charged with the registration of cultivar epithets (names) for heathers, but also with ensuring that the epithets are established in accordance with the ICNCP when this is necessary.

During the long process of editing volume 1 of the *International register of heather names* numerous cultivar names were noted that, in various ways, contravene the articles of the ICNCP. These can be divided into two groups. The largest proportion comprised names for cultivars that are **no longer in cultivation**, as far as we can determine (by comparison with D. Small and A. Small, *Handy guide to heathers*. 1998. 2nd edition). Such names are signalled in the *International register of heather names* – a comment is made under “Note(s)”, giving any particulars that are needed. We regard these names as being of historical interest only, and do not consider that any action is needed to rectify the contravention of the ICNCP. A smaller number of unacceptable names were noted for cultivars that are **still in cultivation**, either in the trade or in the national collections of heathers (cf D. Small and A. Small, *Handy guide to heathers*.

1998. 2nd edition). Three separate courses of action are available, under the articles of the *ICNCP*, to ensure that the cultivars to which these unacceptable epithets apply, have names that do not contravene the *ICNCP*.

1. **Conservation of a cultivar epithet.** Under Article 14 of the *ICNCP* (1995), an ICRA may propose to the International Commission for the Nomenclature of Cultivated Plants that a name should be conserved.

2. **Trade designations.** Certain names which are used in place of accepted cultivar epithets, when the latter are considered unsuitable for marketing purposes may be treated as trade designations, under Article 11 of the *ICNCP* (1995). For further comment on trade designations see below.

3. **New names.** When neither of those two actions can be undertaken, a new name has to be provided so that the cultivated clone can bear an acceptable name.

In this paper those names that are being proposed for conservation, and those that are to be treated as trade designation, are noted and discussed. We also signal here the new names that have been provided within volume 1 of the *International register of heather names* – these names were established in the *International register of heather names* as noted, or, in a few cases, elsewhere, also as noted.

CULTIVAR NAMES PROPOSED FOR CONSERVATION

Conservation of cultivar names is effected by the action and published decision of the International Commission for the Nomenclature of Cultivated Plants (*ICNCP* 1995, Article 14.1). Conservation is *not* effected by the listing of the names in the *International register of heather names*, or here. The Heather Society can only propose names that in its opinion should be conserved, and the main reason for doing so is to preserve existing usage and avoid unwelcome changes and consequent confusion especially in the trade.

The names of heathers that are proposed for conservation contravene the *ICNCP* in various ways. Some are Latin names published since 1 January 1959 when Latin was proscribed for use in the formation of cultivar epithets.

‘Alba Jae’ — *Calluna vulgaris* ‘Alba Jae’

The earliest printed source that can be traced for this name is the revised edition of F. J. Chapple, *The heather garden* (p. 74) published in 1960. Thus this epithet contravenes the ICNCP (1995, Article 17.9), because it includes a Latin word.

The cultivar is in cultivation, and changing the name would cause undesirable confusion, this name is proposed for conservation under ICNCP (1995, Article 14). Jae was the nick-name of Mrs Jessie Chapple.

‘Atrorubens, Daisy Hill’ — *Erica cinerea* ‘Atrorubens, Daisy Hill’

Originally made commercially available using the name ‘Atrorubens’ by T. Smith & Sons (Daisy Hill Nursery, Newry, County Down, Northern Ireland) in about 1937. There was no claim made by the nursery that it was new. Later it was recognized as distinct from an older cultivar also named ‘Atrorubens’, and was tagged “Daisy Hill”. However the earliest record of the new name, ‘Atrorubens, Daisy Hill’, that can be traced post-dates 1 January 1959. The new name, being in Latin form and published after 1 January 1959, contravenes the ICNCP (1995, Article 17.9). This name is proposed for conservation under ICNCP (1995, Article 14).

‘Baylay’s Variety’ — *Erica cinerea* ‘Baylay’s Variety’

This clone was found by J. W. Baylay (Solihull, Birmingham, England) in the late 1940s, and introduced by T. C. Thacker (Knowle, Warwickshire). The earliest records of this name all post-date 1 January 1959. Because the name contains the word variety it contravenes the ICNCP (1995, Article 17.15). This name is proposed for conservation under ICNCP (1995, Article 14).

‘Carnea: Underwood’s Variety’ — *Erica cinerea* ‘Carnea: Underwood’s Variety’

This cultivar was introduced by G. Underwood & Son (Hookstone Green Nursery, West End, Woking, Surrey, England) in the 1950s under the name *E. cinerea* ‘Carnea’. That name is also given to a much earlier cultivar and so it was amended by adding “Underwood’s Variety”. The earliest printed source for the amended cultivar epithet is the second edition of J. F. Letts, *Hardy heaths & the heather garden* (p. 84) published in 1966. Therefore the amended name contravenes the ICNCP (1995, Articles 17.9, 17.15) because it contains both a Latin word and the word “variety”.

Again, as the cultivar is still in cultivation, the name has been proposed for conservation under ICNCP (1995, Article 14).

‘Coccinea Smith’s Variety’ — *Calluna vulgaris* ‘Coccinea Smith’s Variety’

This plant was originally named *C. vulgaris* ‘Coccinea’ but to distinguish it from an earlier cultivar with the same name, the name was amended by adding “Smith’s Variety”. The earliest publication of the name in its amended form that has been traced is the first edition of T. L. Underhill, *Heaths and heathers* (p. 96) published in 1971. Therefore the amended name contravenes the ICNCP (1995, Articles 17.9, 17.15) because it contains both a Latin word and the word variety.

Again, as the cultivar is still in cultivation, the name has been proposed for conservation under ICNCP (1995, Article 14).

‘Compacta Alba’ — *Andromeda polifolia* ‘Compacta Alba’

This name is used for a dwarf, compact clone of *A. polifolia*, with ivory-white bells, which received an AGM in 1993. The status of the name is very confused, but it apparently was not published until after 1 January 1959 and therefore contravenes the ICNCP (1995, Article 17.9). To preserve existing usage, this name, which is *attached only to the AGM clone*, is proposed for conservation under ICNCP (1995, Article 14).

‘Corrie’s White’ — *Calluna vulgaris* ‘Corrie’s White’

This name does not appear to be the original one for the clone, although it is the name in current use. ‘Corrie’s Form’ was published as early as 1938, and it is an acceptable name. The later variant, ‘Corrie’s White’, contravenes the ICNCP (1995, Article 10). To preserve current usage, this later epithet is proposed for conservation under ICNCP (1995, Article 14).

‘Dainty Bess Junior’ — *Calluna vulgaris* ‘Dainty Bess Junior’

This is not the earliest available name for the cultivar, but reverting to ‘Bess Junior’, which is the earliest one, would be confusing. To preserve existing usage, this more recent name is proposed for conservation under ICNCP (1995, Article 14).

‘Early Bride’ — *Daboecia cantabrica* ‘Early Bride’

The original name for this clone was ‘April Fool’ (*The Heather Society bulletin* no.18: 4 (Spring 1973)). However, the plant did not sell under that name and it was given the alternative name ‘Early Bride’. Changing a name for commercial reasons contravenes the ICNCP (1995, Article 27.3). To preserve this name as an accepted cultivar name, rather than treating it as a trade designation, it is proposed for conservation under ICNCP (1995, Article 14).

‘Harlequin’ — *Daboecia cantabrica* ‘Harlequin’

This name contravenes the ICNCP (1995, Article 17.12), being a later parahomonym of *Calluna vulgaris* ‘Harlekin’. To preserve current usage it is proposed for conservation under ICNCP (1995, Article 14).

‘Hirsuta Albiflora’ — *Calluna vulgaris* ‘Hirsuta Albiflora’

This Latin epithet is in widespread use, but the earliest publication that has been traced is in the second revised edition of F. J. Chapple, *The heather garden* (p. 92) published in 1964. It appears therefore that the name contravenes ICNCP (1995, Article 17.9) unless it was validly published as a botanical epithet. However that cannot be the case as valid botanical names comprise only a single word.

The name is evidently a contraction of *C. vulgaris* var. *hirsuta* f. *albiflora* published by Beijerinck, but that taxon explicitly included ‘Alba Pilosa’ and ‘Serotina’, and therefore it is not co-extensive with this clone.

To preserve existing usage it is proposed for conservation under ICNCP (1995, Article 14).

‘King George’ — *Erica carnea* ‘King George’

This was originally named ‘King George V’ in honour of King George V (1865–1936). Contracting the name by removing the Roman numeral v effectively created a new name. While Article 10 of the ICNCP (1995) lays down that accepted epithet should be the earliest available one, in this case a later name is now the only one in use.

To preserve current usage this name is proposed for conservation under the ICNCP (1995, Article 14).

‘Mrs Sam Doncaster’ — *Erica carnea* ‘Mrs Sam Doncaster’

Although the cultivar name originally was ‘Mrs Samuel Doncaster’, D. McClintock (*A guide to the naming of plants*. 1st edition. 1969) recommended using ‘Mrs Sam Doncaster’. This later spelling is now in common use, and is therefore proposed for conservation under the ICNCP (1995, Article 14).

‘Multicolor’ — *Calluna vulgaris* ‘Multicolor’

This cultivar was originally named ‘Prairie Fire’ in North America but when introduced commercially in England during the early 1960s the name ‘Multicolor’ was used. It is produced in very large numbers in the UK, and reverting to the original name would cause chaos.

While *multicolor* exists as an epithet for a *forma* within *C. vulgaris* (f. *multicolor* Beijerinck), that *forma* is very rarely encountered and the epithet is hardly ever used. Because we consider it desirable to maintain existing usage ‘Multicolor’ is proposed for conservation under the ICNCP (1995, Article 14).

‘Pyramidalis’ — *Calluna vulgaris* ‘Pyramidalis’

‘Pyramidalis’ is a later name for ‘Alba Pyramidalis’ (see D. F. Maxwell, *The low road*. 1927). However, the latter name is not in current use. To avoid change to a familiar name, ‘Pyramidalis’ is proposed for conservation under ICNCP (1995, Article 14).

‘St Keverne’ — *Erica vagans* ‘St Keverne’

‘Kevernensis’, based on the valid Latin name *E. vagans* var. *kevernensis* W. B. Turrill, may be used as a cultivar name under the ICNCP (1995, Article 17.3). The botanical name was published in 1922, and it has frequently been employed as a cultivar name. Thus it appears to have priority over ‘St Keverne’ for which the earliest published source that can be traced is dated 1925.

To avoid unnecessary changes to a familiar name it is proposed that ‘St Keverne’ should be conserved against ‘Kevernensis’ under ICNCP (1995, Article 14).

TRADE DESIGNATIONS

Article 11 of the *ICNCP* (1995) defines a **trade designation** as a name 'which is used in place of the accepted cultivar epithet when the accepted cultivar epithet is considered unsuitable for marketing purposes.' In this context it is important to reiterate two other important rules. Firstly, the **accepted cultivar epithet** is the 'earliest one which must be adopted' for a cultivar under the rules laid out in the *ICNCP* (1995, Article 10.1). Secondly, under Article 27.3 (*ICNCP* 1995) a cultivar epithet 'must not be rejected merely because (a) it is inappropriate ... or insulting, (b) another one is preferable, or (c) it has lost its original meaning.' Clause (b) is the clause that seems most relevant to heathers. In other words, a name, once established, cannot be altered on a whim, especially when the cultivar epithet has been registered.

Trade designations are, however, **not** regulated by any code, and the *ICNCP* (1995) specifically sets down in Principle 8 that 'the practice of applying trade designation as replacement for cultivar epithets is not supported by the *Code*. Such trade designations are not to be recognized as cultivar epithets.' Furthermore, while an ICRA may record such designations 'they must not be given cultivar status' (Article 7. 4).

The following section lists cultivar epithets that are the correct names for the clones to which they have been attached, and the alternative names used in the trade which are deemed to be trade designations. Trade designation are not enclosed by inverted commas, and are printed in different type-style as below. Their use is not sanctioned by The Heather Society which, in accord with *ICNCP* (1995), accepts only the correct cultivar names.

GOLD HAMILTON — accepted name *Calluna vulgaris* 'Chernobyl'

This cultivar was originally named 'Chernobyl' in 1990, after the Ukrainian city which was the site of a nuclear disaster in the 1980s. The name was apparently changed for commercial reasons, contrary to the *ICNCP* (1995; Article 27.3). GOLD HAMILTON should be treated as a trade designation.

HIGHLAND CREAM — correct name *Calluna vulgaris* 'Punch's Dessert'

This was the second name given to 'Punch's Dessert', contrary to the *ICNCP* (1995, Article 27.3), when it did not sell well under its original name.

HIGHLAND CREAM – correctly 'Punch's Dessert' – must not be confused with the sport from 'Darkness' also named 'Highland Cream' (and also named by Highland Heathers).

JOHN DENVER — accepted name *Calluna vulgaris* 'Marleen Select'

The cultivar was originally named 'Marleen Select', an accepted name, but was later re-named as a compliment to the famous country singer. JOHN DENVER should be treated as a trade designation.

MADAME SEEDLING — correct name *Erica carnea* 'Weisse March Seedling' ('Weiße March Seedling')

This cultivar was a sport on 'March Seedling' found by R. Bratfisch (Germany) about 1986; the name was established in *Der Heidegarten* 26: 12 (1989). The clone is in the trade under the name MADAME SEEDLING, which should be treated as a trade designation.

NORDLICHT — accepted name *Calluna vulgaris* 'Skone'

The name of this clone was changed because it did not sell well as 'Skone'. The later epithet contravenes the ICNCP (1995, Article 27.3) and the original name 'Skone' should be reinstated. However, if the clone is indistinguishable from 'Goldsworth Crimson Variegated' that name has precedence over 'Skone'. Meanwhile NORDLICHT should be deemed a trade designation.

WHISKY — accepted name *Erica carnea* 'Bell's Extra Special'

This cultivar was registered in July 1992 by Kurt Kramer (Edeweicht-Süddorf, Germany) (registration no. 104) under the name 'Bell's Extra Special' (see *Yearbook of The Heather Society* 4 (1): 51 (1993)). At the same time a synonym, 'Whisky', was noted and published. Under Article 35 of the 1980 edition of the ICNCP, a cultivar could have 'one or more legitimate synonyms' including 'a commercial synonym' which was 'an alternative name ... which may be used instead of its correct name...'. Under the 1995 edition, the term "commercial synonym" was replaced by "trade designation". Thus WHISKY is now deemed to be a trade designation.

WINTER RUBIN — accepted name *Erica carnea* 'Kramer's Rubin'

This seedling, raised by Kurt Kramer (Edeweicht-Süddorf, Germany) in 1981 was introduced in 1992, and was registered under the name 'Kramer's Rubin' by Mr Kramer on 20 November 1992 (registration no. 112). The cultivar epithet 'Kramer's Rubin' was validly published, in accord with the 1980 edition of the ICNCP, in the *Yearbook of The Heather Society* 4 (1): 52 (published on 16 November 1993). 'Kramer's Rubin' was also printed (without a description) as a preliminary designation in *Blatt für Sortenwesen* 26 heft 9: 383 (September 1993) when the clone was submitted for plant breeders' rights.

In *Yearbook of The Heather Society* 1994: 43, the name 'Winter Rubin' was published as 'a legitimate replacement ... requested by the introducer'. The edition of the ICNCP current at that date (1980 edition) did not permit replacement of a name, unless the name was not validly published, for example because 'publication ... [was] against the expressed wish of its originator ...' (ICNCP 1980, Article 41). There is no indication that that article (or its replacement, Article 26.2, ICNCP 1995) applies in this case, especially as Mr Kramer registered the clone under 'Kramer's Rubin'.

It is therefore proposed that WINTER RUBIN should be treated as a trade designation for the cultivar 'Kramer's Rubin' to which plant breeders' rights were granted on 31 March 1995.

NEW NAMES

A small number of cultivars which are still in cultivation circulate under names that contravene the *ICNCP*. Because conservation of the existing name is not possible or not desirable, it is necessary to provide these plants with acceptable **new** epithets.

In some of these cases the original name chosen duplicates a name already in use for a heather cultivar that is still in cultivation. It is more correct, however, to state that these names duplicate ones already in use with the entire **denomination class** which, as we have noted, includes *Andromeda*, *Bruckenthalia*, *Calluna*, *Daboecia* and *Erica*. This is more easily explained, and hopefully more easily understood, when an example is given. Because a cultivar of *Daboecia* \times *scotica* was named 'Goscote', and that name is accepted, it is not possible for any other cultivar of any species (or hybrid) of *Daboecia* **and of the four other genera** to have the same name. Thus the cultivar of *Calluna vulgaris* later named 'Goscote' has to be given a new epithet.

The other common contravention concerns names published after 1 January 1959 formed from Latin words. Latin was proscribed for cultivar names from that date.

A further rule that is sometimes – and, it must be stressed, unwittingly – broken concerns the use within cultivar names of the vernacular names of other plants. Good examples are the words lilac and rose, which, unfortunately, are the vernacular names of the genera *Syringa* and *Rosa* respectively, as well as being the names of colours. Under Article 17.13, after 1 January 1959 'the botanical, common or vernacular name of any genus ... may not form a new cultivar epithet', and after 1 January 1996 this was extended so that such a name could not be the last word of the epithet. Thus names like "Nelson's Lilac" or "Small's Rose" were prohibited after 1 January 1996, although "Lilac Nelson" or "Rose Small" would be acceptable (these names are merely examples, and do not exist).

It must be stressed that this rule applies in any and every language, not just in English. And, it clearly prohibits the use in epithets of any of the common names for the genera *Andromeda*, *Bruckenthalia*, *Calluna*, *Daboecia* and *Erica*. Thus, after 1 January 1966, cultivar names incorporating the words heath and heather, and their synonyms in other languages cannot be established. Such names as 'Heidekönigin' (= heather queen) are not acceptable and cannot be established.

'American Gold' — *Erica tetralix*: original name *E. tetralix* 'Aurea' is not acceptable for two reasons; 'Aurea' is already in use within the denomination class, and is Latin.

Refs. *Heather news* 23 (3): 3 (Summer 2000, without a description); *International register of heather names* vol. 1, part 1: 36 (27 August 2000).

'Catherine Kolster' — *Erica carnea*: original name *E. carnea* 'Catherine' is not acceptable because it is already in use within the denomination class

Refs. D. Small & A. Small, *Handy guide to heathers*: 93 (1998: 2nd edition); *International register of heather names* vol. 1, part 1: 113 (27 August 2000).

'Crinkly Tuft' — *Calluna vulgaris*: original name *C. vulgaris* 'Crispa', which, being Latin, is not acceptable.

Ref. *Heather news* 23 (3): 3 (Summer 2000, published 11 August 2000); *International register of heather names* vol. 1, part 1: 146 (27 August 2000).

'Daniel Whiddon' — *Daboecia cantabrica*: correct name for *D. cantabrica* 'Newberrii', which was also known as 'Newberry' (see this *Yearbook*, pp 23–27).

Refs. *International register of heather names* vol. 1, part 2: 4 (15 November 2000).

'Dorset Beauty' — *Erica x watsonii*: original name *E. ciliaris* 'Hybrida' and *E. x watsonii* 'Ciliaris Hybrida'. See *International register of heather names* for explanation.

Ref. *International register of heather names* vol. 1, part 2: 25 (15 November 2000).

'Durford Wood' — *Calluna vulgaris*: original name *C. vulgaris* 'Durfordii', which, being Latin, is not acceptable.

Ref. *International register of heather names* vol. 1, part 2: 31 (15 November 2000).

'Fraser's Old Gold' — *Calluna vulgaris*: original name *C. vulgaris* 'Old Gold' ('Old Gold' (Fraser's)); 'Old Gold' is already in use within *Calluna*.

Refs. *Heather handbook*, Heather Acres Inc. (Elma, Washington, U.S.A.): 1 (1994); *Heather news* 22 (3): 9–10 (1999); *International register of heather names* vol. 1, part 3: 114 (19 December 2000).

'Goscote Wine' — *Calluna vulgaris*: original name *C. vulgaris* 'Goscote', a name already in use for *Daboecia x scotica* 'Goscote'.

Ref. *International register of heather names* vol. 1, part 2: 97–98 (15 November 2000).

'Harry Hawke' — *Daboecia cantabrica*: formerly "Berrydown C", which is not a cultivar name (see this *Yearbook*, pp 23–27).

Ref. *International register of heather names* vol. 1, part 2: 115 (19 December 2000).

'Hillbrook Limelight' — *Calluna vulgaris*: original name *C. vulgaris* 'Limelight'; 'Limelight' is in use for a Cape heath cultivar.

Refs. Catalogue [c.1991], Barncroft Nurseries (Longsdon, Staffordshire); *International register of heather names* vol. 1, part 2: 127 (15 November 2000).

'Isle of Hirta' — *Calluna vulgaris*: original name *C. vulgaris* 'Hirta'.

Hirta is, of course, the name of the island on which it was found. Unfortunately this familiar name contravenes the ICNCP because it is liable to confusion with the Latin word *hirta* (feminine of *hirtus* = hairy). It also duplicates a Latin varietal name within *Calluna*, published in the 1790s, as well as a specific epithet in *Andromeda*, both within the denomination class.

Ref. *International register of heather names* vol. 1, part 2: 146 (15 November 2000).

'Jan Stewer' — *Daboecia cantabrica*: formerly "Berrydown E", which is not a cultivar name (see this *Yearbook*, pp 23–27).

Ref. *International register of heather names* vol. 1, part 3: 7 (19 December 2000).

'Lilac Elegance' — *Calluna vulgaris*: original name *C. vulgaris* 'Elegantissima Lilac' which contravenes the ICNCP (1995) in two ways: it contains a Latin word, and secondly, it ends with the vernacular name of another genus (lilac) although it is clear that that word refers to the flower colour.

Ref. *International register of heather names* vol. 1, part 3: 40 (19 December 2000).

'Lilac Osmond' — *Daboecia cantabrica*: original name *D. cantabrica* 'Lilacina', a Latin name contravening the ICNCP

Ref. *International register of heather names* vol. 1, part 3: 40 (19 December 2000).

'Lily Evelyn' — *Erica cinerea*: original name *E. cinerea* 'Lily', which contravenes the ICNCP because it is (also) the vernacular name of the genus *Lilium*.

Ref. *International register of heather names* vol. 1, part 3: 42 (19 December 2000).

'Pearly Pink' — *Erica x watsonii*: original name *E. x watsonii* 'Pink Pearl' which is already in use in the denomination class.

Refs. *Yearbook of The Heather Society* 3 (10): 51–53 (1992); *International register of heather names* vol. 1, part 3: 126 (19 December 2000).

'Pennyacre Gold' — *Calluna vulgaris*: original name *C. vulgaris* 'Serlei Lavender' which contravenes the ICNCP in two ways; it is a name partly in Latin form published after 1 January 1959 (contrary to Art. 17.9), and contains, as a final word, the common name of another plant (contrary to Art. 17.13).

Ref. *International register of heather names* vol. 1, part 4: 59 (19 December 2000).

'Pennyacre Lemon' — *Calluna vulgaris*: original name *C. vulgaris* 'Citronella' which contravenes the ICNCP in three ways: it is Latin (*citronellus* = pale yellow); it is also a generic name within the family Icacinaceae, and it is a vernacular name for *Cymbopogon nardus* (mana grass).

Ref. *International register of heather names* vol. 1, part 3: 128 (19 December 2000).

‘Peter Gurney’ — *Daboecia cantabrica*: formerly “Berrydown D”, which is not a cultivar name (see this *Yearbook*, pp 23–27).

Ref. *International register of heather names* vol. 1, part 3: 130 (19 December 2000).

‘Rosy Chimes’ — *Erica cinerea*: original name *E. cinerea* ‘Rosabella’, a name already in use.

Refs. D. Small & A. Small, *Handy guide to heathers*: 125 (1998: 2nd edition); *International register of heather names* vol. 1, part 4: 31 (19 December 2000).

‘Seattle Purple’ — *Daboecia* × *scotica*: original name *D. × scotica* ‘Seattle Lilac’: unfortunately that name has to be rejected because of the use of lilac as the final word of the name. The ICNCP forbids the use of vernacular names of other plants as the final part of a cultivar name.

Refs. *Yearbook of The Heather Society* 1999: 31–32, 69; *International register of heather names* vol. 1, part 4: 55 (19 December 2000).

‘Silversmith’ — *Daboecia cantabrica*: original name *D. cantabrica* ‘Silver Bells’ which is already in use within the denomination class.

Ref. *International register of heather names* vol. 1, part 4: 68 (19 December 2000).

‘Strawberry Bells’ — *Erica cinerea*: original name *E. cinerea* ‘Strawberry’, which is not acceptable because it is the vernacular name of another plant.

Ref. *International register of heather names* vol. 1, part 4: 91 (19 December 2000).

‘Sunningdale Bright Tips’ — *Calluna vulgaris*: this clone, with mauve flowers and red, orange and cream shoot tips in Spring, is widely sold in England under the name ‘Sunningdale’ but it is clearly not ‘Sunningdale’.

Ref. *International register of heather names* vol. 1, part 4: 97 (19 December 2000).

‘Tijdens Copper’ — *Calluna vulgaris*: original name *C. vulgaris* ‘Cuprea Select’ contains a Latin word contrary to the ICNCP.

Ref. *International register of heather names* vol. 1, part 4: 107 (19 December 2000).

‘Tom Cobley’ — *Daboecia cantabrica*: formerly “Berrydown A”, which is not a cultivar name (see this *Yearbook*, pp 23–27).

Ref. *International register of heather names* vol. 1, part 4: 108 (19 December 2000).

‘Tom Pearce’ — *Daboecia cantabrica*: this is the correct name for the clone also named ‘Whitemoor Giant’ and ‘Dartmoor Giant’ (see this *Yearbook*, pp 23–27).

Ref. *International register of heather names* vol. 1, part 4: 108 (19 December 2000).

‘Waquoit Brightness’ — *Calluna vulgaris*: original name *C. vulgaris* ‘Brightness’, which is already in use within the denomination class.

Refs. *Heather news* 23 (3): 3 (Summer 2000, without description); *International register of heather names* vol. 1, part 4: 130 (19 December 2000).

CULTIVAR NOTES

CULTIVARS REGISTERED TO 31 DECEMBER 2000

161. *Calluna vulgaris* 'Gaia'

Registered 13 January 2000; Brita Johansson, Musselvägen 3, 468 34, Vargön, Sweden.

Broad spreading, strictly upright habit, very dark green foliage, flowers deep reddish-purple (H13 crimson), Aug-Sept, single. Very hardy.

Seedling: raised by Brita Johansson (Vargön, Sweden). Named after the Greek earth goddess and the first mother of all the Greek gods.

refs: *International register of heather names* part 2: 70; *Yearbook of The Heather Society* 2000: 108; *Yearbook of The Heather Society* 2001: 25

illust: *Yearbook of The Heather Society* 2001: 25.

162. *Calluna vulgaris* 'Peggy'

Registered 13 January 2000; Brita Johansson, Musselvägen 3, 468 34, Vargön, Sweden.

Lilac-pink, single flowers, Jul-Aug; foliage deep gold, shaded bronze and red in cold weather. Low, spreading but compact; 20 x 30cm. Like 'Arran Gold' but much hardier and reliable. Very early sprouting in spring.

Seedling, deliberately raised but parents not known; raised by Brita Johansson (Vargön, Sweden) and first propagated in 1994. Introduced by Lindhults Plantskola (Sweden). Named after the Johanssons' pet fox terrier.

refs: *International register of heather names* part 3: 127; *Yearbook of The Heather Society* 2001: 22, 25.

illust: *Yearbook of The Heather Society* 2001: 22

163. *Calluna vulgaris* 'Gunilla Ugglä'

Registered 13 January 2000; Brita Johansson, Musselvägen 3, 468 34, Vargön, Sweden.

Double, pale pink flowers, Sept-Nov, with dark greyish foliage; open, spreading habit. Unusually clear flower colour; some flowers shaded salmon; blooms very early. Does not respond well to pruning.

Wild-collected; found by Gunilla Ugglä in a forest in Småland, southeast Sweden, in August 1987. The nursery code for it was *C. vulgaris* "Klacken".

refs: *International register of heather names* part 2: 107; *Yearbook of The Heather Society* 2001: 26.

JEAN JULIAN

International Cultivar Registrar

SUPPLEMENT TO THE INTERNATIONAL REGISTER OF HEATHER NAMES: 1 (2001)

As The Heather Society completed and published the *International register of heather names* during 2000, henceforth we will print supplementary lists of names in *Yearbooks of The Heather Society*, containing only names that are *not* in the published *International register*. However, on this first occasion, we include below, names not hitherto recorded in a *Yearbook* but published in the *International register*. These are indicated by an asterisk (*) preceding the botanical name and have a reference to the *International register* following (e.g. *IRHN 1: 47* = *International register of heather names* part 1 page 47).

* *Calluna vulgaris* 'Alina' – *IRHN 1: 31*.

* *Calluna vulgaris* 'Anne's Zwerg' – *IRHN 1: 47*

* *Calluna vulgaris* 'Gerta' – *IRHN 2: 75*: this name is **rejected** being a parahomonym of 'Gerda'

* *Calluna vulgaris* Heidezauber (CLL 108) – *IRHN 2: 119*. **NB**: this name cannot be established because the epithet is already in use.

* *Calluna vulgaris* Hövel King – *IRHN 2: 134*. **NB**: not established, a preliminary designation.

* *Calluna vulgaris* Hövel Star – *IRHN 2: 134*. **NB**: not established, a preliminary designation.

* *Calluna vulgaris* Klacken – *IRHN 2: 107*. **NB**: not established: a nursery-code used for 'Gunilla Ugglä'.

* *Calluna vulgaris* 'Rebecca's Red' – *IRHN 4: 7*.

* *Calluna vulgaris* Weeno – *IRHN 2: 134*. **NB**: not established, a preliminary designation.

* *Erica carnea* 'Lena' – *IRHN 3: 37*.

Calluna vulgaris 'Denkewitz' – **new name**: established here

Foliage lime-green with copper tips in Spring.

A selection made by J. Hachmann (Barmstedt, Schleswig-Holstein, Germany) by 2000.

ref: pers comm. 23 December 2000, J. Flecken to D. Small.

Calluna vulgaris 'Rokoko' – **new name**: established here

Double ruby (H5) flowers with a white centre.

A sport from one of the cultivars in the Beale group, selected by J. Hachmann (Barmstedt, Schleswig-Holstein, Germany) by 2000.

ref: pers comm. 23 December 2000, J. Flecken to D. Small.

Calluna vulgaris 'Unity' – **new name**: established here

Ruby (H5) multibracteate flowers, Oct-Dec, with dark green foliage. Stiff, upright habit.

Deliberate seedling 'Battle of Arnhem' x 'Allegro' raised by Kurt Kramer (Edeweicht-Süddorf, Germany).

ref: pers comm. 31 August 2000, K. Kramer to D. Small.

THE HEATHER SOCIETY'S PROCEEDINGS

David McClintock

President of The Heather Society 1990-2000

Our Society was founded in 1963 largely due to the efforts of David McClintock. During the past 37 years, he has encouraged and nurtured the Society so that, today, it has become internationally respected as being the foremost society of its kind. In 1969 he became Vice-President and then President in 1990, a rôle he was to hold for 10 years.

In 1970, the Society was honoured to undertake the rôle of International Cultivar Registration Authority. David McClintock became our first Registrar, recording and cataloguing all heather names throughout the world. It was a rôle he diligently carried out for 25 years. Even to this day, he is closely involved with the first *International register of heather names* published in parts during the period August 2000 to December 2000.

In the 1960s he could be heard regularly on various BBC radio programmes promoting heathers as garden plants at every opportunity. To date, he has written well over 100 articles on heathers, participated in several books on heathers but perhaps the best-known one is his invaluable *A guide to the naming of plants* where he expertly makes the intricacies of plant naming, with special reference to heathers, readily understood. He was also largely responsible for planning and setting up the first National Collection of heathers at the Royal Horticultural Society's Garden, Wisley in Surrey.

His enthusiasm has won him countless friends everywhere particularly in Holland and Germany and has greatly helped the formation of sister societies in these countries. He was instrumental in creating the First International Heather Conference held in Germany in August 2000 where all Heather Societies were present, delegates coming from all over Europe and North America.

In his wide travels in Europe, he has found an abundance of new cultivars of heather, many of which are extremely popular garden plants today. Typical of the man, he has never sought to make financial gain from his finds, just willing to share these with other like-minded people.

David McClintock has done, and continues to do so, a great deal of unpaid work for The Heather Society and I am sure I speak for everyone within the Society in wishing him well in whatever he does in his retirement.

DAVID SMALL *President*

FIRST INTERNATIONAL HEATHER CONFERENCE AND THE HEATHER SOCIETY TOUR, 25-31 AUGUST 2000

The Millennium International Conference of 25 to 28 August, held in Elmshorn, northwest of Hamburg, was an outstanding success. The myriad of travel arrangements for the delegates were all co-ordinated without a hitch, miraculous considering the disruption that was to ensue from the various blockades, and the first rate programme devised by Jurgen Schröder and his colleagues in the German and Dutch societies was blessed by mainly fine weather that continued for our subsequent tour.

The conference and tour provided a broad overview of the continental approach to heather gardens, as well as of horticultural methods, markets for heathers and related plants, and the challenges faced by the industry in Germany and the Netherlands. They also provided an opportunity to meet some of the people behind many of interesting developments in the world of the Ericaceae.

THE INTERNATIONAL CONFERENCE, ELSHORN

On **25 August**, Heidefreunde President, Jurgen Schröder, welcomed all delegates on their arrival at the Hotel Royal. After the excellent dinner we enjoyed a performance by the folk dance-group, Ueterst-End, in traditional costumes.

On **Saturday (26 August)** we left early on the coaches for the first of several visits to private gardens. Hans and Inge Ochs attractive heather garden in Moorrege featured a rain-gauge among the fuchsias but it was a glorious morning. A slight surprise, given the harsh continental climate, were the well-grown plants of *Erica arborea* 'Estrella Gold'. There were also some excellent *Daboecia* cultivars and *Andromeda polifolia* 'Compacta' among the heathers. Other interesting items included semi-standard heathers and a wide variety of conifers. Next stop was the large heather and rhododendron nursery of Hans Hachmann in Barmstedt which was founded in 1929 by Hans's father, Johannes. Their methods and practices were explained clearly, and the party was shown round the glasshouses, the potted sale-plants and the interesting heather garden. Of particular interest was the new range of *Rhododendron* cultivars grafted on to lime-tolerant rootstocks, which is opening up new possibilities for gardeners. Four interesting brochures, including a superbly illustrated catalogue, were on sale.

After an excellent lunch in Barmstedt, the party divided up and took turns to visit the private gardens of Jurgen and Dorie Schröder, and of Manfred and Helene Hundt. The Schröders had many attractive heathers as well as *Phyllodoce* and *Cassiope*. An ornamental grass that caught my eye was *Festuca glauca*. The Hundts had a varied and relaxing mix of heathers with roses and trees, all accessible by gravel paths.

After a superb buffet dinner at the hotel, some conference delegates visited the Elmshorn Festival (Elmshorn was celebrating 20 years as a port) which concluded with a spectacular firework display.

Sunday (27 August) was more relaxed with the morning devoted to intellectual matters. Kurt Kramer gave a talk and brilliant slide show on European species of heather and other members of the Ericaceae. Variations in form of flowers, foliage and habit within and between species and cultivars, and how he had exploited these in hybridisation, were vividly illustrated. Herr Kramer's talk was followed by a paper on heather's place on the 'tree of life' by Ian Small (see this *Yearbook* p. 15). The purification and extraction of DNA, the complexity of its sequencing, and how the results can be quantified for rigorous mathematical analysis were all presented clearly, together with some preliminary results. The taxonomic implications were made clear.

After lunch we visited the Thiensen Arboretum, Ellerhoop, which until 1956 had been a tree nursery owned by Erich Frahm. Acquired by the district of Pinneberg in 1980 it now contains around 4000 different species and cultivars, set out in a variety of environments including heather and cottage gardens. A lengthy stroll, again in glorious sunshine, was followed by the naming of *Calluna vulgaris* 'Bonita', a plant of which was presented to the Chairman of The Heather Society by Hermann Fruchtenich, President of Landwirtschaftskammer Schleswig-Holstein. There followed a quick trip to the nursery of Herbert Hatje at Tornesch. Originally founded by his father in 1935 to supply fruit trees, roses and hedge plants, Herbert, who became owner in 1970, has changed it to heathers and dwarf rhododendrons. After we had returned to the hotel Dick de Bruijn, President of *Ericultura* (the Dutch Heather Society), gave a pre-dinner slide show about Scottish heather gardens.

On the final day of the conference, **Monday 28 August**, we travelled in the morning to Bispingen, south of Hamburg, and took it in turns to visit A. H. Warnecke's porcelain factory and Westermann's Heather Nursery in Baumschulenweg. The porcelain factory produces tableware bearing a *Calluna* design. The nursery, now run by Thomas Witte, was interesting for growing plants in open ground and it has an excellent stock (some 300 cultivars) of healthy plants. Being an artist as well as a nurseryman may explain the spectacular spare-tyre cover on Thomas Witte's car – heather, of course. After another excellent lunch in Borstel, we visited the Osterheide, Schneverdingen. The weather turned sunny again as we explored the heathland, damaged and polluted but otherwise preserved by post-war military activity by the British and Canadian armies. Jürgen Schröder rashly offered a bottle of champagne to anybody finding a white *Calluna* – the eagle-eyed Eileen Petterssen was the first to find one. The party then visited the public heather garden, laid out in the form of a giant wheel, composed of spokes of different cultivars, complete with a vantage point from which there was a panoramic view. The Garden Manager described the garden's history; it originated from a garden exhibition in Düsseldorf in 1987 and was implemented in 1990. About 100 cultivars are planted, including *Calluna vulgaris* 'Dark Star' and 'Larissa'.

Finally, it was back to the hotel for the last time. To everybody's surprise, we were each given a mug of the Luneburger Heide porcelain and a sample of a speciality tea. Before the farewell dinner The Heather Society's first Award of Honour was



Fig. 1. Some of the delegates to the First International Heather Conference admiring the heathers at the nursery of Hermann Westermann now managed by Thomas Witte.

[photo H. Westermann]

presented to Kurt Kramer for his pioneering work on hybridising and breeding heathers by Ron Cleevely, in the absence of The Heather Society's President, David McClintock (see pp. 63-64). All the delegates then toasted, thanked and congratulated the organisers for a highly successful conference. Everything had gone smoothly, and despite several languages everybody mixed: that heathers make friends had been proved again. After dinner the Liedertafel Schleswig-Holstein Elmshorn v 1866 Men's Choir entertained us with a series of national songs.

A second international heather conference is being mooted for Scotland. Those charged with organising it in about four years' time, whatever its location, will find the efforts of the Gesellschaft der Heidefreunde a hard act to follow.

The Heather Society Tour

On **Tuesday 29 August**, The Heather Society party, numbering 21, set off for Edewecht in the Ammerland region of Germany. Our first visit was to Folkert's enormous nursery where the production is on a scale far greater than the nurseries visited around Hamburg. The heathers are grown not only for gardens but for placing on family graves every November – after which they are discarded. Then we visited the family business of the Jeddelloh Pflanzenhandels Gmb to see the computerised plant distribution centre. The highlight of the day was our visit to Kurt Kramer's nursery. In 1995 he switched from selling plants to producing rooted cuttings to order. Kurt gave a guided tour of his garden, and a most informative insight into his choice of cultivars and their history. Among the many interesting plants were some excellent white-flowered *Erica x oldenbergensis*. After giving everybody a glass of champagne, in appreciation of his Award of Honour, he guided the group around his stock-beds and recently bred plants. These included some mouth-watering prospects, including the reddest of *Daboecia* cultivars, several multibracteate *Calluna*, an attractive deep pink *Erica terminalis*, and a seedling of *Daboecia cantabrica* 'White Blum' with erect flowers but an open habit. We were all given a plant of *Calluna vulgaris* 'Anne's Zwerg' which has a trailing habit and is suitable for growing in tubs. Later we attended a dinner in Kurt's honour at Bad Zwischenahn, near Oldenberg.

Next day (**Wednesday 30 August**) the tour moved on to The Netherlands. At Geurt van Hoef's nursery in Barneveld some of us had a swinging time! This family-run business stocks some 1,100 cultivars. The cuttings are rooted in a light dry peat and rough river sand mix under polythene, which takes about six weeks. After another six months or so (late Spring) they are hardened off outside. They use a potting machine, the potted plants being transported via conveyor belt into crates and trucked away. Continuing to Boskoop, Dick de Bruijn showed us round the nursery of C. van Esveld which has an enormous range of shrubs, deciduous trees including cultivars of *Acer* (maples) and conifers.

For our final day (**Thursday 31 August**) Dick had arranged a tremendous boat trip around the dykes where we saw some of the challenges of the horticulture industry. Container nurseries on concrete, being lighter than soil, could use lorries but have to recycle their irrigation water into a reservoir so as not to pollute the dykes with nutrients which would replace the water hyacinths with algae. Nurseries growing plants in soil need to replace the displaced soil with other soil brought in from elsewhere. The water-level in the dykes is maintained, by means of pumping stations and a series of locks, at 2.5 metres below sea-level. They are regularly dredged, the sludge having to be dried and stored for two years before it can be used. To end with we made a brief visit to van de Lip's nursery, complete with a novelty heather garden on a viking boat. After lunch in Boskoop the party dispersed; some returned home from Schipol Airport, while the rest of us set off for Hoek van Holland and the ferry to Harwich.

Great thanks were due to David Small for the meticulous planning of the tour, and to him and David Edge for driving the mini-buses.

Richard Canovan

AWARD OF HONOUR

The AWARD OF HONOUR is to be presented for especially noteworthy contributions to heather research or horticulture.

KURT KRAMER is a 'heather breeder extraordinaire' as a result of the numerous cultivars that have been propagated in his nursery at Edeweicht. Since the 1980s he has been involved in extensive pioneering work on the hybridisation of heathers. In recognition of this, and the significant contribution he has made to heather horticulture, The Heather Society decided to bestow its first AWARD OF HONOUR on Kurt at the First International Conference held during August 2000 at Elmshorn, Schleswig-Holstein, Germany.

A farmer's son, Kurt became interested in horticulture and began his career working for the large Jeddelloh nursery close to his home. Eventually, after working in the nursery that Hermann Westermann established at Bispingen – one of the first to concentrate on producing heathers – Kurt established his own business. Following mechanisation of several stages of production he became the largest producer of heathers in Germany for a short while. However, his own botanical interest in the plants, together with the constant need to provide new plants to satisfy commercial demand, led to his decision to concentrate on breeding new cultivars. The database for the International Register contains 69 cultivars he has introduced and many more await completed trials.

Erica × *darleyensis* 'Kramer's Rote' resulted from crossing *E. carnea* 'Myretoun Ruby' with *E. erigena* 'Brightness' in 1981. This has become one of the top-selling heathers. In the early 1980s Kurt embarked on an extensive programme of crossing *E. carnea* 'Springwood White' with 'Snow Queen' in an attempt to obtain a white *E. carnea* cultivar that had the vigour and flowering performance of 'Springwood White' but with a more upright habit that would be far more attractive in a garden centre. He planted out some 10,000 seedlings from which just five were eventually selected. Of those, three have become very popular: 'Ice Princess', 'Isabell' and 'Winter Snow'. Again, in the early 1980s, he tried to improve on 'Myretoun Ruby', and has succeeded with 'Nathalie' (darker than 'Myretoun Ruby') and 'Red Jewel' (redder than 'Myretoun Ruby'). Occasionally, such work unintentionally produces an exceptional cultivar. 'Rosalie', for instance, is perhaps the best mid-pink *E. carnea*. Two outstanding foliage cultivars that came from this work are *E. carnea* 'Golden Starlet' and 'Bell's Extra Special'. In recent years, Kurt Kramer's work has extended the flowering season with late-flowering *Calluna* cultivars.



Fig. 1. Kurt Kramer receiving The Heather Society Award of Honour from the Honorary Secretary, Ron Cleevely (left).



By concentrating on bud-flowering cultivars he has been able to extend flowering into December and in some cases later. Some of the cultivars in this colourful range are still being evaluated. Early releases were *Calluna vulgaris* 'Melanie' (white) and 'Romina' (purple). In 1995 he released 'Alexandra' (dark red), and, in 1996, an even better white, 'Alicia', together with a beautiful clear pink, 'Anette'. A number of others have also been licenced but have yet to make their way onto the British market although they are included in the popular "Garden Girls" range sold on the continent. Two are worth noting; 'Sandy' is a yellow-foliaged version of 'Melanie', and 'Larissa' which is even redder than 'Alexandra'.

His current projects aim to extend the Spring flowering season by producing some interesting colour breaks in *E. spiculifolia* and *E. australis*, and to develop large-flowered cultivars of *E. x darleyensis*.

Kurt Kramer thoroughly deserves our first AWARD OF HONOUR and we hope he continues to enrich our heather gardens for many years to come.

David Small

BOOK REVIEWS & RECENT PUBLICATIONS

OLIVER, Inge & OLIVER, E. G. H. (Ted). 2000. *Ericas of the Cape Peninsula*. Cape Town: Protea Atlas Project. Pp xx, 123; line drawings; limp covers. ISBN 1-919684-23-9, R18.

The Protea Atlas Project aims to encourage amateur involvement in botany and if this gem of a little book by Inge and Ted Oliver is anything to go by, they will certainly succeed in stimulating awareness of the Cape flora.

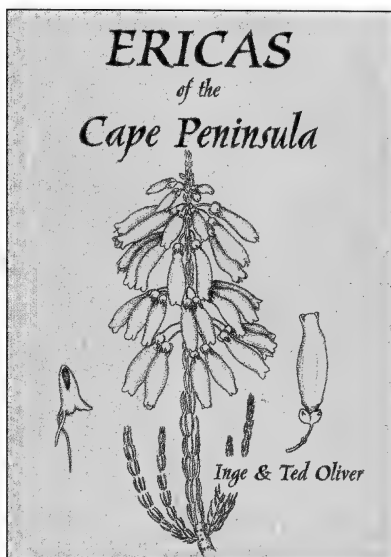
This field-guide sets out to provide a key to 104 species of *Erica* endemic to the Cape Peninsula of South Africa. It starts by listing nine points which should be noted when observing *Ericas* in the wild; occurrence (whether species is rare, occasional or locally common); habit; flower colour; soil type; habitat (flats, slopes, wet, shady or hot and dry); surrounding vegetation (which plants dominate, whether recently burnt, etc.); aspect (north-facing etc.); pollinators; locality using a large-scale map or GPS instrument.

The key itself is broken down into five groups defined by the length of the corolla. Within each group, detailed observations of anthers, stigma, sepals, flower colour, type of inflorescence and leaves guide you towards your ultimate goal.

Each species is described, explaining what to look for in particular and each is accompanied by a superb line drawing by Inge Oliver, similar to those that we have come used to seeing in *Yearbooks*, indicating which parts of the flower and plant we should concentrate upon.

In addition to the diagnostics, information is provided on etymology and distribution and there are other comments sharing with us the wealth of knowledge that Inge and Ted have gained over the past 25 years or so.

For a book selling for under £2, it should be on every bookshelf of anyone who has a love of *Erica*.



GILBERT, O. 2000. *Lichens*. (The New Naturalist Library no. 86). London: HarperCollins. Pp 288; illustrated including 16 colour plates. ISBN 0-00-22008-3, £34.99 (hardback) (paperback £19.99).

This addition to the New Naturalist series covers all aspect of British lichens including their growth and reproduction. It is now accepted that these organisms represent a symbiotic relationship between a fungus and a photosynthetic partner. The photographs of multi-coloured mosaics of lichens convey their beauty, while this colouring is also explained (pp 40–42). They can tolerate an extensive range of climatic and geographic conditions and have colonised many habitats from churchyards to arid wastes and deserts. A susceptibility to air pollution has led to their important use in detecting levels of environmental pollution. This was first advocated by Mellanby in the 1960s who declared: “Air for lichens; water for trout”.

Members of The Heather Society will find most interest in the chapter dealing with the lichens occurring on heaths and moors (pp 118–130). After referring to other classifications, the author distinguishes heaths as the product of human activities, with moors being natural and more stable. However, the lichens of both have much in common, although a small group of the more striking lichens (for example, *Cladonia sulphurica*) characterise northern moorlands and may occur on isolated lowland wet heaths (including *C. strepsilis* in the New Forest). Lichen communities on heaths are dominated by species of the widespread, terricolous (ground-covering) genus *Cladonia* which includes the red-capped *C. coccifera* (popularly named Bengal matches and British soldiers) as well as the cup-shaped *C. pyxidata*, and the coral-like *C. ramulosa*. Around 50 ground-dwelling species and 15 epiphytic taxa have been recorded in such habitats. Their occurrence is dependent upon the ecological phase of the rotational burning cycle used in heather management (pp 122–123) and the consequent level of light that reaches ground level. A similar cycle is thought to occur on un-managed moors.

It might be possible to utilise the succession of lichens that follow burning to determine the age of heather growth. However, in addition to that sequence, some account would have to be made for inhibitory action of chemicals produced by *Cladonia* species which prevent germination of seeds from other plants. Gilbert (p. 129) concluded that, despite their abundance, lichens could not be relied upon to identify heathland for conservation, since this depended on the heather cycle.

Lichen-rich sites have some 25 taxa and most recognised “commons” come within that category, but the number of lichen species on Lavington Common in West Sussex have declined from 24 in 1975 to just 8 in 1991.

The coastal heaths of southwestern England and Scotland contain other distinctive lichens. For example the closed canopy of *Erica vagans* on the Lizard Peninsula opens up to allow the growth of the conspicuous epiphytic taxa *Evernia*, *Parmelia* and *Usnea*, while short heath on Tresco is the only site in Europe for *Heterodermia*.

The author concludes with an appeal for focused field work by local naturalists to obtain information and conduct surveys, especially on maritime sites, that would provide answers to outstanding questions such as why prostrate heathers on windswept sites in Cornwall and the Cairngorms encourage the growth of yellow fructose lichens.

This volume maintains the accepted high standard of this long-established series being readable, yet thoroughly comprehensive and abreast of the "cutting edge" of this branch of natural history.

R. J. Cleevely

ANDREWS, S., LESLIE, A. & ALEXANDER, C. (editors). 1999. *Taxonomy of cultivated plants. Third International Symposium, Edinburgh, 20–26 July 1998.* Kew: Royal Botanic Gardens. Pp xix, 553. ISBN 1-900347-89-X, £ 27 (hardback).

The title might deter many members from even thinking of looking at this volume, but it is full of interest to those interested in the naming of cultivated plants and, as its flyleaf states, it is "an indispensable reference to everyone in the horticultural industry".

This conference covered the interests of growers, breeders, scientists and botanists, and dealt with a wide range of subjects from intellectual property rights and national collections to genetically modified crops and the various molecular techniques including DNA fingerprinting used for distinguishing plants. One objective of the meeting, in view of the increase in world trade of such plants and the associated growth in legal protection, was to ensure that names were precise, accurate and stable. As Professor Prance points out, this can be achieved by using the new scientific tools that were demonstrated during the conference.

Apart from the history of our own Society's role as the International Cultivar Registration Authority for heathers (pp 375–378), there are other articles that will be of particular interest. The account of the national *Campanula* collection (pp 35–38) highlights problems of identification caused by the restricted information provided in older publications, and itemises the functions of such collections and their value to both amateur and professional

growers, as well as botanists and taxonomists. A brief account of the NCCPG scheme (p. 491) to assist in the conservation and documentation of the biodiversity of garden plants, points out the need to maintain adequate records of all plants held in such collections, while the importance of these living collections over specimens in herbaria as a means of improving our knowledge of the plants is also emphasized (pp 3–10). It is intriguing to learn that one of the problems experienced in Australia is that they have little knowledge of the best methods to cultivate endemic plants (pp 107–111).

The largest section in the book contains papers on systematics, classification and nomenclature (pp 385–478). The short-comings of many existing classification systems is demonstrated by articles on *Rhododendron* (p. 349), *Clematis* (pp 355–358), *Saintpaulia* and *Streptocarpus* (pp 253–264), *Philadelphus* (pp 413–414), all of which suggest methods of resolving these by using scientific techniques, or alternative concepts. The diversity and variation that causes nomenclatural difficulties is discussed in papers on *Hydrangea* (p. 505), Mexican oaks (pp 493–496) and *Helleborus* (pp 297–304). The conflicting interests of commerce and registration are demonstrated by the rivalry of the various rose societies in North America (pp 117–124); a possible solution might be the adoption of the scheme in South Africa (pp 101–106) that requires plants to be registered before plant breeders' rights are granted. Inevitably, there are numerous papers on economic crops such as cereals, legumes, turnips, potatoes, melons, bananas etc., as well as the seed trade.

One of the objectives of the meeting was to stimulate discussion on the *International code of nomenclature for cultivated plants*. Consequently, several papers deal with possible changes, or alternative concepts. Three in particular deal with cultivar definition and recognition (pp 171–203); these discuss nomenclatural problems in horticulture, the use of new DNA techniques as the genetic key for identification, and the UPOV guidelines for DUS (distinctiveness, uniformity, stability) testing. Other papers cover the legal aspects of protection, plant breeders' rights, trademarks, and the UPOV Convention (pp 59–65).

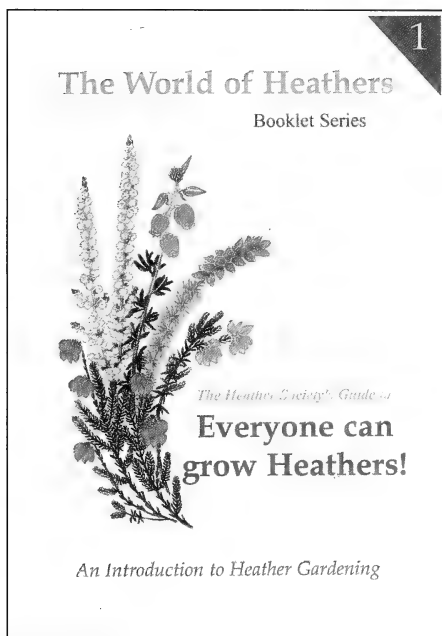
The editors, who were responsible for organising the conference, and the referees have fulfilled their objective of producing a stimulating and invaluable reference to every aspect of the nomenclature of cultivated plants. Commendably the provision of an extensive index facilitates this purpose, while it also enables browsers to re-locate something they have half-remembered. Anyone concerned in the naming of plants would continually gain both knowledge and pleasure from this volume.

R. J. Cleavelly

RECENT PUBLICATIONS

ANONYMOUS. 2000. Lowland heathland 1. Ambitious plans. *English nature magazine* no. 52: 5–7.
Dorset's "Fabled heathland is set for restoration" using money from the National Lottery Fund.

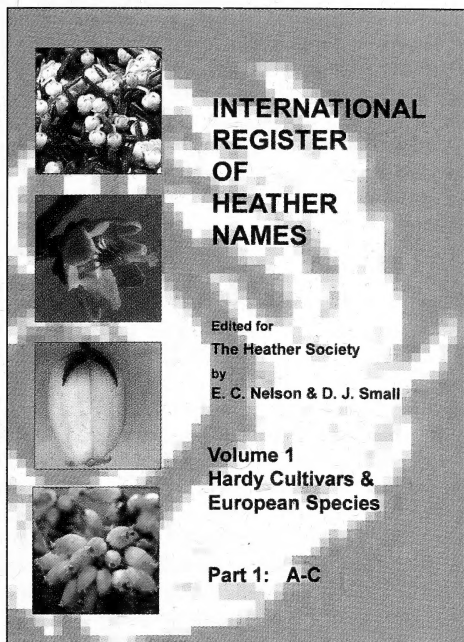
ERHARDT, W., GÖTZ, E., BÖDEKER, N. & SEYBOLD, S. 2000. *Zander Handwörterbuch der Pflanzennamen. Dictionary of plant names ...*. Stuttgart: Ulmer. ISBN 1-903257-01-8. Pp 999.
Well-known and invaluable dictionary of botanical (Latin) names of cultivated plants with synonymy, now including English vernacular names and some cultivar names.



EVERETT, D. 2000. *The Heather Society's guide to Everyone can grow heathers! An introduction to heather gardening.* ISBN 0-9500412-7-0. Creeping St Mary: The Heather Society. Price £2.50

Although published after *Recommended heathers*, this is the number 1 in the Society's "The world of heathers booklet series". It includes sections suggesting heathers for "all soils", for "most soils" and for "acid soils". These sections are illustrated in colour. Clearly and concisely written it is an ideal booklet for "new" gardeners and those who have not tried growing heathers before. Especially valuable are the pages telling you how to test your soil, how and where to buy heathers, and what aftercare your heathers will need. (A review will be included in the next *Yearbook*.)

- FRYER, G. 2000.** James Bolton 18th century paintings of Lepidoptera. *The naturalist* 125: 113-119.
Includes reproduction of one of Bolton's paintings of Small Copper butterfly with bouquet including *Erica tetralix*.
- GLENN, J. 2000.** What's on the box. *The garden* 125 (9): 700-705.
Other plants to use for dwarf hedges including *Erica erigena* 'W. T. Rackliff' and 'Golden Lady' – while not acknowledged this was Daphne Everett's idea and there is a photograph of The Bannut knot garden (again, not acknowledged).
- JOHANSSON, B. 2000.** Ljung – en ständigt skiftande tavla. *Hem Trädgård* 4/2000: 24-27.
Calluna with excellent photographs (many from Brita's book – see pp 1-6 of this *Yearbook*).
- JOHANSSON, M. 1995.** *Ericoid mycorrhizal and saprotrophic fungi in heathland soil – composition and nitrogen sensitivity*. Ph.D.thesis, Department of Mycology, Botanical Institute, University of Copenhagen, Denmark.
The thesis includes the following papers by Johansson:
Influence of ammonium nitrate on the ericoid mycorrhizal colonization of *Calluna vulgaris* (L.) Hull, pp 29-57.
Composition of saprotrophic fungi in a *Calluna* heathland soil and the influence of ammonium nitrate application, pp 59-76.
Endophytic fungi isolated from roots of *Calluna vulgaris* (L.) Hull, pp. 103-122.
Isoenzyme relationship between root endophytes from *Calluna vulgaris* (L.) Hull. - preliminary results, pp 124-129.
- MABBERLEY, D. 2000.** *Arthur Henry Church. The anatomy of flowers*. London: Merrell & The Natural History Museum.
Handsome book, illustrated in full colour, about Church and his stunning flower paintings – his *Calluna* was on the cover of the 2000 *Yearbook*. In this book a similar study of *Daboecia cantabrica* is published.
- MARCHIORI, S., MEDAGLI, P. & RUGGIERO, L. 1998.** *Guida botanica del Salento. Galatin (Lecce)*, Mario Congedo Editore. ISBN 88-8086220-0. Pp [2], 238, colour illustrations.
Handsome book illustrating the flora, vegetation and landscapes of Salento - the veritable heel of Italy. Numerous colour photographs including *Erica arborea* (*erica arborea*) and *E. manipuliflora* (*erica pugliese*), and also references to these two heathers in the Italian text. (See *Optima newsletter* no. 35: 20 (2000) for more detailed review.)
- MILEWSKI, A. V. 2000.** Why succulent flowers seldom produce succulent fruits. *Veld & flora* 86 (2): 80-81.
Pollination and fruit-eating by birds: "there are more than sixty local species of *Erica* ... pollinated by sunbirds ... these have dry fruits."
- MUSTART, P. 2000.** Life after death in fynbos. *Veld & flora* 86 (2): 73-75.
Regeneration after fire and strategies of different species including *Erica*: photo of *Erica daphniflora*, two years after fire
- NELSON, E. C. 2000.** A history, mainly nomenclatural, of St Dabeoc's heath. *Watsonia* 23: 47-58.
- NELSON, E. C. 2000.** *An annotated topographical checklist of the flowering plants, conifers, ferns and fern allies of The Burren Region*. Outwell: the author. in association with The Burren Tourism and Environment Initiative. ISBN 0-9524847-1-4. Pp viii, 124, folding map. £7.50.
Contains new distribution records of *Erica tetralix* (see pp 7-8, this *Yearbook*) on limestone pavement.



NELSON, E. C. & SMALL, D. J. (editors). 2000. *International register of heather names. Volume 1, Hardy cultivars and European species*, parts 1 (A–C) ISBN 0-9500412-9-7; 2 (D–I) ISBN 0-9539079-0-2, 3 (J–P) ISBN 0-9539079-1-0, 4 (Q–Z) 0-9539079-2-9, complete volume 0-9539079-3-7. Creting St Mary: The Heather Society. Price £50

Volume 1 contains all cultivar names and all botanical names that have been traced within the genera *Andromeda*, *Bruckenthalia* (recently subsumed into *Erica*), *Calluna* and *Daboecia*. All the names of cultivars and subspecific taxa for those species of *Erica* indigenous in Europe, Asia Minor and the Atlantic islands (Azores, Madeira and the Canary Islands) and for their hybrid taxa – the so-called hardy heaths and heathers – are also included.

The basic entry for a cultivar comprises the correct name, any synonyms known, a brief description, the cultivar's history and etymology, plus bibliographic references and references to illustrations.

The names of cultivars and hybrids derived from species of *Erica* indigenous in Africa, including the so-called Cape heaths, are not included in this volume. These will be listed in volume 2, which is now being compiled.

A review will be included in the next *Yearbook*.

OLIVER, E. G. H. 2000. Systematics of Ericaceae (Ericaceae-Ericoideae): species with indehiscent and partially dehiscent fruits.

The generic delimitation of the 25 genera in Ericaceae has been investigated and reassessed. Data covering vegetative and floral morphology and leaf anatomy were used. The sample included all 84 species resulting from the revision of the 18 small genera confined to the Cape Floral Region, the monotypic European *Daboecia*, *Calluna* and *Bruckenthalia*, and a selection of 18 Cape species of *Erica* – a total of 105 species. A cladistic analysis of the dataset was undertaken using the parsimony programs, PAUP and Hennig86, to ascertain the presence of monophyletic groups within the tribe. The analyses found a very high level of homoplasy with very few unique synapomorphies defining the clades. No clear monophyletic groups could be determined and many groups currently recognized were found to be polyphyletic. *Erica* itself came out as a large paraphyletic genus. Consequently it was decided to reduce all 18 small Cape genera and *Bruckenthalia* to synonymy under *Erica*. The results also supported the earlier reduction of the pan-African genera *Philippia*, *Blaeria*, *Ericinella* and the European *Bruckenthalia* to synonymy under *Erica*. This results in only three genera being recognized in the tribe Ericaceae – the megagenus *Erica* with \pm 860 species, *Daboecia* and *Calluna*. At present no 'natural' subgeneric classification of *Erica* is possible due to the unresolved relationships within *Erica sensu stricto*. The taxonomic treatment covers the species with indehiscent or partially dehiscent fruits. It includes the new circumscription of the genus *Erica*, keys to the 84 species, of which 16 are newly described, new combinations, as well as a full description, discussion, distribution map and detailed line drawings of each species.

PAYNE, R. M. 2000. *The flora of roofs*. Watlington, Norfolk: the author.

Privately published booklet about *tecticolous* (roof-dwelling) plants, which don't include heathers, but heather often used to thatch roofs.

SAUNDERS R. & SAUNDERS, R. 2000. Does fynbos need to burn? *Veld & flora* 86 (2): 76–78.

Response of fynbos to fire, *Erica* included, but need to reduce fire frequency because "there is virtually no mature fynbos anywhere in the entire" Cape floral kingdom.

WATTS, D. C. 2000. *Elsevier's dictionary of plant names and their origin*. Amsterdam, Elsevier. ISBN 0-444-50356-0. Pp xxx, 1001. US\$ 209.50.

The price is not a mistake; over 200 dollars for more than 1000 pages may seem like good value, but this dictionary is not what it seems. English vernacular names only, and too much unnecessary repetition. Not good value.

WHYTE, P. 2000. Wintry sparkle. *The Irish garden* 9 (10): 18–21.

Erica carnea and *E. x darleyensis*: recommends six cultivars, with colour photographs. Pity about the incorrect names!

Publication dates of
International register of heather names
Volume 1, Hardy cultivars and European species

Part 1 A-C	27 August 2000
Part 2 D-I	16 November 2000
Part 3 J-P	19 December 2000
Part 4 Q-Z	19 December 2000

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YEARBOOK OF THE HEATHER SOCIETY
2001

CONTENTS

A. J. Stow	David Small	ii
Jonathan Tyler	<i>Erica umbellata</i> 'David Small'	iv
Brita Johannson	Vår vintergröna trädgård: Our evergreen garden	1
Juliet Brodie and Darrel Watts	<i>Erica tetralix</i> L. (cross-leaved heath) in The Burren (Co. Clare, Ireland)	7 I
E. G. H. Oliver & I. M. Oliver	The ultimate prize – a new species of <i>Erica</i> !	9 I
Ian Small and Kathleen A. Kron	Placing heathers on the "Tree of Life"	15
Brita Johannson	Hardiness and heathers – a Swedish view	22
E. G. H. Oliver & I. M. Oliver	Taxonomic problems in the <i>Erica filipendula</i> complex	27 I
E. Charles Nelson	Dr Charles Stuart's heather rediscovered in Connemara, Ireland	35
R. J. Cleevely	Widcombe Fair: lyrics	38
Tim Argles	Heaths and heathers at Berrydown Nurseries, Devon	39
R. J. Cleevely	Widcombe Fair: a note	44
E. Charles Nelson and David Small	The names of hardy heathers: proposals for conservation of cultivar names; trade designations; new cultivar names; and other names requiring comment	45
CULTIVAR NOTES		56
SUPPLEMENT TO INTERNATIONAL REGISTER OF HEATHER NAMES: 1 (2001)		57
THE HEATHER SOCIETY'S PROCEEDINGS 2000		
David Small	David McClintock	58
Richard Canovan	First International Heather Conference 25-29 August 2000	59
David Small	The Heather Society's Award of Honour — Kurt Kramer	63
BOOK REVIEWS & RECENT PUBLICATIONS		65

NEW SPECIES NAMED IN THIS ISSUE

Erica filialis E. G. H. Oliver
Erica penduliflora E. G. H. Oliver